Oliver-Sharpey Lectures

ON THE

INTERPRETATION OF THE ELECTROMYOGRAM.

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BY E. D. ADRIAN, M.D., F.R.C.P., F.R.S.,
FELLOW AND LECTURER OF TRINITY COLLEGE, CAMBRIDGE.

LECTURE I.

THE subject of these lectures is not one in which striking advances have been made in the last few years. It is one which raises many more questions than it solves, and it may turn out in the end to have little or no importance in practical medicine. But I believe that it is worth while to review our rather scanty knowledge, because the recording of the electromyogram is, at any rate, an additional method of investigating diseases of the muscles and nervous system, because such investigations may turn out to be of great theoretical value to neuro-pathology, and last, but not least, because they are quite easy to carry out. Prof. Einthoven's string galvanometer is now so popular an instrument of clinical research that the whole apparatus has become standardised, simple to work, and, if not cheap, at any rate not so expensive as it would have been if its use were confined to physiological laboratories. It has been used by physiologists quite as much for recording the action currents of muscles and nerves as for the slower changes in the heart. In medicine, however, its use has been confined, in this country at least, almost entirely to cardiac problems, and so far as I am aware the only extensive observations on the electromyogram which have been published here are those of Dr. Golla. In America Stanley Cobb has made several investigations of great importance, and in Germany the subject, set going by Piper in 1911, has already attracted a number of investigators and been the source of lively controversy.

TECHNIQUE.

To record the electric response in a contracting skeletal muscle only one change is needed in the ordinary electro-cardiograph outfit, and that is an increase in the speed of the recording surface. To give a clear picture of every oscillation in the record, a speed of at least 5 cm. a second is necessary, but higher speeds are well within the range of the ordinary moving plate or film cameras. Many varieties of electrode have been used, of which more anon, but a simple and quite effective form is a small zinc plate covered with lint moistened in saline and held in contact with the skin by bandages. Two such electrodes are placed over the muscle a few centimetres apart; they are connected to the galvanometer switchboard and the skin current, if any, is compensated in the usual way. The shadow of the string is now at rest as long as the muscle is completely relaxed, but any active movement produces an immediate blurring of the shadow and a photograph will show that this is due to a succession of irregular oscillations at a rate of 50–250 a second. The record of these oscillations is the electromyogram which we have to interpret (Fig. 1).

The fact that the record is that of a rapidly oscillating rather than a steady current makes it possible to simplify the technique considerably. If we wish to obtain a true record of a current in the body flowing in the same direction for a second or more, we must use non-polarisable electrodes (e.g., a zinc plate, a pad of lint soaked in $ZnCl_2$, a pad soaked in NaCl, and then the skin), and even then we may have to make allowances for polarisation in the skin itself. But as long as the currents are rapidly alternating, polarisation at the electrodes will merely distort the record slightly and will have scarcely any effect on the frequency or amplitude of the oscillations. So, if we are not on the look-out for steady changes as well as the rapid waves, it is quite permissible to make our electrodes out of metal plates bandaged directly on to the moistened skin or, better, of steel needles thrust directly into the muscle to be investigated. These needle electrodes, introduced by Rehn[1] in 1921, have the advantage of reducing the resistance in the circuit, and the much greater advantage of

FIG. 1.

Tracing of electromyogram recorded from flexors of left forearm during voluntary contraction of moderate force. Upper line—shadow of string. Lower line—time marker recording intervals of 1/50 sec.

leading directly from the contracting muscle or from a particular group of fibres in it. The result is a much better localisation of the electromyogram to one particular region. Action currents produced in the muscle in question will have a much greater, and action currents in other neighbouring muscles a much smaller, effect on the galvanometer. With the ordinary pad electrodes the localisation is so bad that the response might be affected by almost any muscle in the limb.

Apart from the use of needle electrodes, the only other improvement, or suggested improvement, in technique since Piper's work is the use of triode amplification to make possible the recording of very small currents. At present, however, the successful working of systems of this kind needs a great deal of care and experience if the results are to be trusted.

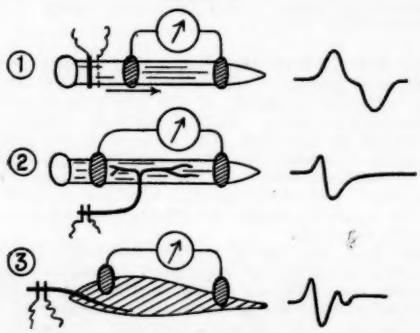
NATURE OF THE ELECTRICAL RESPONSE.

The record, then, consists of rapid oscillations of the string, each lasting from 1/50 to 1/250 of a second, and it seemed reasonable enough to suppose that these are due to a series of action currents in the contracting muscle, action currents, that is, of the type made familiar by the classical muscle and nerve physiology. This interpretation is certainly correct, but it is not so obvious as it appears at first sight. No doubt most of us have hazy recollections of the electric changes which accompany activity in a muscle, confused as a rule with the mysterious workings of Pflüger's law. These recollections ought to tell us that the action current of an isolated frog's sartorius is a diphasic affair, and that successive action currents never become fused with one another, so that if the muscle is thrown into a steady contraction by tetanic stimulation it will give a rapid series of diphasic action currents and a not steady effect. So far the electric response of a voluntary contraction agrees with that of an artificial tetanus in an excised muscle. But if we produce an artificial tetanus in a human muscle by stimulating its motor nerve, the excursions of the string are usually much larger than those produced by a voluntary contraction. This fact has caused some misgivings in the past, but there is not much doubt that the larger size of the artificial effect is due to the more complete synchronisation of the impulses in the different groups of muscle-fibres. Indeed, the differences there are, are exactly the differences we should expect to find on passing from the simplest case to one more complicated. The point has been discussed by Piper,[2] Hoffman,[3] and others, but certain aspects are worth re-stating.

The classical frog's sartorius is an ideal muscle for the study of the action current, because it is composed of parallel fibres, of which the majority run almost the entire length of the muscle. If it is stimulated at the pelvic end (where there are no nerve-fibres), a disturb-

ance travels along every fibre from the stimulated point, showing itself by a thickening of the fibre—the mechanical response and a movement of ions—the electric response. The ionic movement is of such a character that if electrodes are placed on the muscle and connected together through a galvanometer, a brief current will pass through the galvanometer towards the electrode which is nearest the active region of the fibre. As the active region passes first under one electrode and then under the other, the current in the galvanometer will travel first one way and then the other, forming the ordinary diphasic response (see Fig. 2 (1)), and the rate of conduction is easily calculated from the interval between the phases and the distance between the electrodes. There are two main complications which arise when other preparations are used: (*a*) We may stimulate the nerve instead of stimulating the muscle-fibre directly (Fig. 2 (2)), and (*b*) we may use a muscle in

FIG. 2.



which the two leading-off electrodes are applied to two distinct groups of muscle-fibres (Fig. 2 (3)). The effect of stimulating by way of the nerve will depend on the position of the nerve-ending in the fibre with reference to the electrodes, for a disturbance will travel out in either direction from the nerve-ending. If this lies between the two electrodes the response will be smaller because of the interference between the two phases—it may be reduced to nothing when the electrodes are equidistant from the nerve-ending, and in any case the separation between the phases will not vary in a regular way with the distance between the electrodes. A further complication is added when the electrodes are on different muscle-fibres. This must almost certainly happen with the penniform type of muscle, and it must often happen with other types, as human muscle-fibres are rarely longer than 5–6 cm. The result will be that the response to a single stimulus may become polyphasic instead of diphasic, since it is unlikely that the active regions of the different fibres will exactly neutralise one another's effect on the galvanometer circuit.

Owing to these complications the response of a human muscle stimulated by its motor nerve may seem to depart considerably from the classical diphasic action current. One muscle may seem to give much smaller action currents than another, though its contractions are no less powerful, and the response may seem to vary in an arbitrary way when the position of the electrodes is altered. The same is true of the action currents due to reflex or voluntary activity; but there is no doubt at all that the oscillations of the electromyogram are caused by the same processes as those which give the action current of the frog's sartorius.

It should be mentioned that Henriques and Lindhard[4] do not agree with the classical account of the action current as due to a change conducted throughout the muscle-fibre. They wish to substitute for it the notion of an oscillating discharge from the motor end-plate. For reasons stated elsewhere,[5] the older conception seems to be much preferable to the new, but the question need not concern us at the moment. There is a general agreement that the action current denotes the passage of an impulse into the muscle-fibre, and the exact process by which the current is produced is immaterial.

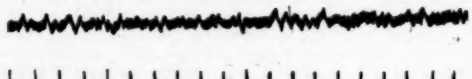
TETANIC AND TONIC CONTRACTIONS.

We may take it, then, that the rapid oscillations of the electromyogram are due to a rapid succession of action currents in the muscle, that the voluntary contraction is in part at least a tetanus of the same kind as that produced by repeated stimuli to the motor nerve. This has been shown more directly by actual mechanical records of muscle in voluntary contraction. The very delicate methods used recently by Hill[6] and by Athanasiu[7] (both involving the use of the string galvanometer) agree in showing that the contraction is never steady but exhibits rapid oscillation of about the same frequency as those in the electromyogram. The contraction is an incomplete tetanus in fact, in the sense that the fusion of the successive twitches is not perfect. This leads at once to one of the chief questions which the electromyogram may help to solve. The question is whether there are any contractions of central origin occurring normally or pathologically in skeletal muscles which are not of the nature of a tetanus, which are not accompanied by a rapidly oscillating action current. The answer to this question is still doubtful, though the number of investigations which have appeared on it recently makes one hope that a definite answer is not far off. The position at present is that various examples have been put forward of contractions, centrally innervated, which have appeared to go on without producing an oscillating electromyogram, but further investigation has shown that in most of these examples the oscillations can be detected if the recording system is sensitive enough, though they are often of extremely small amplitude. One such case which will serve as a good example is that of the sexual clasping reflex of the male frog. During the breeding season the forearms are maintained steadily in the clasping position for a fortnight or more, and in 1921 Kahn[8] found that the forearm muscles seemed to be quite free from action currents. Action currents appeared if the reflex was augmented by interfering with the frogs, but disappeared again as soon as the steady condition was returned to. Later researches confirmed this work and added the information that the reflex was not affected by injection of atropine or adrenalin or by section of the sympathetic.[9] Recently, however, the missing action currents have been found by Wachholder[10] and by Lullies.[11] They are extremely small in comparison with the electromyogram of a normal phasic contraction in a frog's muscle, but Lullies has made the interesting observation that the force exerted during the clasp is also very small as long as both frogs are absolutely quiet, but that the slightest stimulus causes an immediate increase both in the force exerted and in the electrical oscillations. There is, in fact, very little of the steady, continuous pressure which the appearance of the forearms suggest, but we are dealing with a reflex which appears to be continuous because it is evoked at once by the slightest movement or external stimulus. The condition suggests a comparison with a mild degree of spastic paraplegia, when the muscles are probably flaccid as long as the leg is completely at rest, but harden into "tonic" activity at once when they are moved or touched by the examiner. In spastic muscles the action current oscillations are also very difficult to detect, and some observers have denied their existence. Hoffmann, Hansen, and Weiszäcker,[12] whose technique is above suspicion, have shown that small oscillations are undoubtedly present and that they increase when the tension exerted by the muscle increases. It would be surprising if this were not so, for in decerebrate rigidity the extensor muscles give the typical oscillating electromyogram (Fig. 3), and the close relation between decerebrate rigidity and spastic paraplegia is too well established to be set

aside. The presence of the oscillating response in decerebrate rigidity was described by Dusser de Barenne and Buytendick,[13] and has been confirmed repeatedly. It is an observation of fundamental importance, for it shows that in a contraction which is usually taken as an example par excellence of a tonic postural reflex, there is the same intermittent excitation which is found in the ordinary tetanus. This does not exclude the possibility that there may be some steady excitation of another kind, occurring at the same time and giving rise to no electrical effect but augmenting the contraction of the muscle. This suggestion has often been made on account of the small metabolic exchange, the absence of fatigue in tonic postural reflexes, and the presence of sympathetic as well as ordinary motor nerve-fibres running to the muscle. The relatively feeble electrical effects combined with strong contractions in spastic muscles might seem to favour the idea of a feeble tetanus superimposed on a steady background of some other kind of contraction, but, unfortunately, the electrical effects really give us little information one way or the other, because the amplitude of the electric oscillations may depend on many factors which are not necessarily related to the force of contraction. It is true that in the frog's sartorius Watts[14] has compared the tension developed in a single twitch with the amplitude of the electric response, and finds a linear relation between the two, and this is the relation we should expect if changes in the force of the twitch depended simply on changes in the number of muscle-fibres in action. But if we measure the diphasic instead of the monophasic response (as we must do in human muscles), the maximum e.m.f. will depend on the degree of interference between the two phases—i.e., on the interval separating the moments of arrival of the active region or regions at the two electrodes, and if we are dealing with a series of responses the interference of successive phases will still further complicate matters. All this would be true of a muscle stimulated artificially, so that all the fibres are activated together; a much greater source of uncertainty arises from the fact that in a centrally innervated contraction various groups of fibres may be contracting independently of one another. Clearly the response in the galvanometer could be reduced to nothing at all if there were two groups of muscle-fibres activated alternately so that the action current due to the one group is always in the opposite direction to that in the other group, and generally the less perfect the synchronisation of the different fibres, the smaller will be the average effect at any moment as shown in the string galvanometer. It is in cases of this kind that needles in the muscle have the advantage over pads on the skin, for the latter record the average current in the whole muscle, but with needle electrodes the fibres in the straight line between them will have a greater effect on the galvanometer circuit than the fibres in outlying parts of the muscle. For a further discussion of some of these points we may refer to a recent paper by Forbes and Cattell[15] on the crossed extension reflex.

There is one outstanding case in which a centrally-innervated contraction shows no electric response at all in spite of sensitive recording and rigid technique. This is the case, described by Magnus and Lilliestrand,[16] of the sustained reflex contraction brought about by the injection of tetanus toxin into a muscle. In patients suffering from the disease the contracted muscles have been found by some observers to give the oscillating response and by others to be current-free. In Magnus and Lilliestrand's experiments, however, there seems no doubt of the absence of response in the galvanometer. The contractions were certainly reflex in origin and they were not affected by section of the sympathetic. Whether the absence of response is due to complete lack of synchronisation in the different fibres is a question which must be settled by further investigation.

FIG. 3.



Oscillating action currents from thigh extensors of a cat during decerebrate rigidity.

The conclusion to be drawn is, therefore, that the small size of the electrical effect in certain types of contraction is no proof that these contractions are a mixture of a tetanus and a steady activation which has no electric response. They do not show that a steady effect does not exist, but with the one exception mentioned, the main result is that all kinds of contractions, centrally innervated, are partly at least of a tetanic character.

Lewy has recently brought forward some evidence that in contractions with a marked "tonic" element there is another kind of electric response which shows itself by a steady deflection of the string.[17] If it were proved that a steady current does flow through the muscle when it contracts, it would be valuable evidence for the dual nature of the contraction, but great caution is needed in the interpretation of such effects, as the steady current may be due to changes in the electrodes and galvanometer circuit as well as to changes in the muscle. Einthoven[18] has shown that in decerebrate rigidity there is often a displacement of the mean position of the string and a return to the undeflected position when the contraction is inhibited. But he found that exactly the same displacement is produced by a passive movement of the muscle and concluded that it is due to the alteration in the resistance occurring when the electrodes are moved nearer to one another. Again, Stanley Cobb has published some records of electromyograms[19] which show steady deflections quite indistinguishable from those of Lewy, but Cobb is clear that the movement in his records is due to imperfect fixation of the electrodes on the skin. No doubt these sources of error were taken into account, but their possibility makes one hesitate to accept Lewy's conclusions without further confirmation.

It may be mentioned here that the time-relations of the contraction are much slower in red muscle than in white, so that a red muscle-fibre should be able to give a sustained contraction with a much smaller energy expenditure than a white. But the contractions are of essentially the same type in the two and the electric response of red muscle has the usual form, though it is slower in development and decline.

We must be content, then, to leave undecided the question whether the nervous system produces any sustained contractions which take place without the usual oscillating action current and to return to the consideration of the oscillations themselves.

Now, whatever may be the reason for the characteristic frequency and shape of the electromyogram curves, there is no doubt that the oscillations are a sign that the muscle is actively contracting. Thus, without further interpretation, the electromyogram may be used to indicate the onset of activity in different muscles, and in several respects it is a more convenient index than the other signs of activity which may be recorded—the contraction, the mechanical vibrations, or the muscle sound. It has been used in this way for the analysis of movements by Golla and Hettwer,[20] and by Wachholder.[21] The problem which confronts us to-day, however, is to see if we cannot make use of the electromyogram to tell us more about the nature of the activity in the muscle and about the processes in the central nervous system which make it active.

FREQUENCY OF OSCILLATIONS.

For the reasons which have been mentioned, we can get little definite information by measuring the amplitude of the movements of the string—in other words, the strength of the currents in the galvanometer circuit. The frequency of the oscillations should have a much greater significance, and most of the investiga-

tions of the electromyogram have centred round this point. It would probably have been a great deal easier to analyse the processes at work if the frequency had shown great variations under different conditions, but we must take nature as we find it, and one of the chief features of the electromyogram is the close family likeness of all electrical records of voluntary contraction. The oscillations are usually irregular and the total number in a second may vary over a fairly wide range, yet the range of variation is much the same for every muscle and for every kind of contraction, so that it would be impossible from an inspection of an actual record to say anything more than that it was a normal electromyogram. A considerable change in the force of contraction does not produce a definite change in the frequency of the oscillations, but merely one of amplitude, and, indeed, the only "normal" condition where the frequency does change is in extreme fatigue, where it is temporarily reduced.

It would not be true to say that the oscillations are completely irregular, though there are often long stretches in a record where the waves seem to occur at random within the limits imposed by a frequency of 50–250 a second and where the most painstaking Fourier analysis seems unlikely to split up the record into trains of regular waves at different frequencies. It is a curious fact, however, that Piper, who was the first to make any detailed investigation of the electromyogram, was satisfied that there was always a dominant frequency in the record of about 50 a second. According to him the typical response consists of a series of large waves occurring regularly at a frequency of about 50 a second with a variable number of smaller waves superadded. His records bear out this statement, but many other workers have been unable to detect any sign of the dominant rhythm. Three years ago my respect for Piper's rhythm was considerably increased by obtaining a record in which the rhythm was remarkably steady (Fig. 4). The record was from the deltoid of a patient with dystrophia myotonica, and for this reason it cannot be described as a normal electromyogram, but since then I have been under the impression that something approaching Piper's rhythm can be found in records of very power-

FIG. 4.

Record from deltoid of a case of dystrophia myotonica, showing regular waves.

ful contractions, though a weaker contraction is less likely to show it. This impression, for which I had very little evidence, has been confirmed by the work of Henriques and Lindhard,[22] which shows very great regularity in the electromyogram of maximal voluntary contractions, but little or none with weaker movements. The frequency of these regular oscillations varies in their experience from about 40 to 65 a second and may vary from one muscle to another in the same individual. A long record will often show small patches of fairly regular waves broken up by irregular waves at a higher frequency (Figs. 5, 6, and 7). It is doubtful if the records are ever completely regular, for measurements of the intervals between the peaks of successive waves will generally show slight variations, but in a "regular" record all the intervals are grouped fairly closely round the average value.

The maximum frequency is not easily determined, for it is certainly high enough to be near the limits of capacity of the ordinary string galvanometer. Using the very perfect instrument at the Marey Institute, Athanasiu[23] has obtained electromyograms with small groups of waves occurring at frequencies as high as 400 to 500 a second. Except in extreme fatigue or in certain experimental or pathological conditions, the frequency is seldom less than 50 a second. Recently, however, Wachholder[24] has detected a series of small waves at very low frequencies (five to ten a second) in all muscles which are not completely relaxed. The

FIG. 5.

Powerful contraction of supinator longus.

FIG. 6.

Powerful contraction of biceps.

FIG. 7.

Weaker contraction of biceps. Waves more irregular.

waves are diphasic and are recorded with needle electrodes and a tight string. This observation, if generally confirmed, would have an important bearing on the problem of tone and the postural reflexes in general.

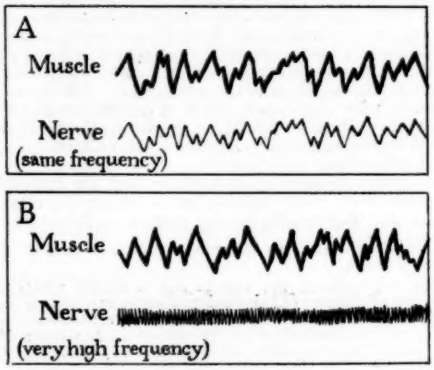
CHANGES IN FREQUENCY.

Apart from the tendency of the oscillations to become more regular when the strength of contraction is maximal, there is no significant change in the normal muscle except in extreme fatigue. Nor has any characteristic frequency been detected in the involuntary movements of various nervous diseases. An exception ought, perhaps, to be made in the case of ankle or patellar clonus, for here each movement is accompanied by a single diphasic action current and not by a series. There are some indications of a reduction in frequency when the sensory nerves from the muscle are interfered with. Weizsäcker[25] has reported a case of this kind with a lesion of the posterior roots and an electromyogram showing waves at only 19 a second, and Dusser de Barenne[26] has reduced the frequency of the oscillations led off from his forearm muscles by injecting novocaine into them in a dose sufficient to anæsthetise the sensory but not the motor nerves. Another way of reducing the frequency is by cooling the muscle. This effect was discovered by Forbes and Rappleye[27] and by Fahrenkamp,[28] and it is sufficiently obvious to be used as a class demonstration. The exact relation between the temperature of the muscle and the frequency of the electromyogram remains to be worked out, but my impression is that a considerable fall of temperature is needed to produce any change in frequency. This completes the list of conditions where the rhythm undergoes a definite change—i.e., a change outside the limits of the ordinary variations of frequency.

THE MEANING OF THE NORMAL FREQUENCY.

What deductions can be drawn from the normal electromyogram, what does it tell us about the nature of the voluntary contraction, the state of the muscle, and the activity of the motor neurones? So far the only conclusion reached has been that the voluntary contraction is tetanic, the muscle, or that part of it which furnishes the electromyogram, being activated intermittently and not continuously. What we have still to discuss is the rate at which this activation takes place, and the question is really of fundamental importance. The point is that a record like the typical electromyogram might be obtained by stimulating the motor nerve to the muscle at a very high frequency (500–1000 a second), which is too rapid for the muscle to follow (Fig. 8). If the voluntary contraction is maintained by a discharge of impulses at such high

FIG. 8.



frequencies from the motor centres, the frequency recorded in the electromyogram represents merely the best that the muscle can do. It will be determined by the state of the muscle, the length of its refractory period in particular, and it will tell us nothing about the activity of the nerve centres except the one fact that they discharge at a frequency too high for the muscle to follow. This possibility may be considered as at one end of the scale. At the other we have the possibility that each wave in the electromyogram is determined by a distinct volley of impulses from the motor centre. According to this interpretation, therefore, the record can give us fairly detailed information about what is happening in the spinal cord. According to the other it can tell us little or nothing.

The truth probably lies somewhere between these two extremes, for it is unlikely that the motor neurones discharge such a rapid and steady flow of impulses that the electromyogram bears no impress of what is happening in the cord, and on the other hand, the interpretation must always be complicated by the fact that the fibres of the muscle are not all necessarily acting in unison. On the whole, however, the balance of evidence is in favour of the view that the frequency in nerve-fibre and muscle-fibre is the same, or at any rate, that the two are closely related. This evidence will be discussed in the next lecture.

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TUBERCULOSIS IN THE TROPICS.*

BY SIR JAMES K. FOWLER, K.C.V.O., C.M.G., M.D., D.Sc. (HON.),

MEMBER OF THE COLONIAL ADVISORY MEDICAL AND SANITARY COMMITTEE; CHAIRMAN OF THE COLONIAL MEDICAL APPOINTMENTS SUBCOMMITTEE; CONSULTING PHYSICIAN TO THE BROMPTON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.

JUDGING from the annual medical reports of the British colonies, I fear that we must conclude that pulmonary tuberculosis is on the increase amongst the native inhabitants of most of them. Tuberculosis may not loom very largely in the curricula of schools of tropical medicine, but diseases refuse to be localised and assert their right to world-wide prevalence and to this law it is no exception. The features of tuberculosis as it occurs in the tropics are, I think, more concerned with the inhabitants, with their past history in relation to it, and with their housing and mode of life, than with the climatic conditions which are peculiar to tropical countries. The evidence is overwhelming that when tuberculosis is introduced into a country hitherto free from it, the natives manifest a degree of resisting power much inferior to that shown by inhabitants of countries in which it has been present for countless generations. It may be well to consider for a moment the reason for this difference, as much appears to depend upon the explanation which is accepted. Possibly an analogy may help towards a solution of the problem.

In 1910 I was appointed chairman of the Yellow Fever Commission (West Africa). This work led me to take a special interest in that disease and to ponder over the assumed immunity of the natives. I was gradually led to see that no such absolute immunity exists, and that to speak of the natives as the "immunes" and of the Europeans as the "non-immunes," as was then and still is the practice, was to ignore obvious facts. There have been fatal cases amongst the natives in every epidemic in West Africa, not only in the past, but also in recent times. The mortality-rate amongst them as compared with that obtaining amongst the Europeans is no doubt nearly always much lower and the type of the disease is, as a rule, milder, but they are not immune. Why is this? The answer given by Sir Rubert Boyce was as follows:—

> "Those living in a country where the disease is endemic at a very early period in their life get an attack of the disease which naturally confers a certain degree of immunity; later they may get subsequent attacks, but each successive attack is less serious; when manhood is reached the subject is in all probability completely immune." [1]

The investigators sent out to West Africa by the Yellow Fever Commission, all of them carefully selected men, were specially instructed to search

* A paper read at the International Conference on Health Problems in Tropical America, held at Kingston, Jamaica.

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28. Fahrenkamp Ztsch. f. Biol., 1915, lxv., 83.

for evidence of the occurrence amongst the natives of attacks of fever which conformed to Sir Rubert Boyce's views, but no such evidence was obtained. It must, however, be admitted that it is a very difficult matter in West Africa to obtain trustworthy evidence as to the nature and incidence of the diseases which affect the natives.

I believe that in one form or another the view of Sir Rubert Boyce is still held, but I have great difficulty in accepting it. There is probably no disease an attack of which produces a more profound and lasting immunising effect upon the subject of it than yellow fever, so rare indeed is a second attack that many deny its occurrence. Must we, notwithstanding this fact, believe that every native has four or five such attacks during his life and requires them all to produce such a relative insusceptibility as we admit him to possess? But this is not the only difficulty. If there are at all times sufficient infected stegomyia in West Africa to ensure that all the natives in childhood, youth, and adult life receive doses of the virus adequate to confer upon them their relative degree of insusceptibility to yellow fever, why do Europeans escape for such long periods that the memory of the last epidemic is often lost and replaced by a hope that the disease has at last disappeared from among them? Is this, then, the only way in which a native race can obtain an immunity, either complete or partial to a disease, or failing that, a higher degree of resisting power than the "new-comer" to the country? Yellow fever is pre-eminently a "new-comer's disease"; so also, I submit, is tuberculosis. In the case of yellow fever, the white man usually goes to the disease from a country or an area in which it is unknown; he has little or no acquired resisting power and is fortunate, should he be attacked, if he escapes with his life.

In communities hitherto free from tuberculosis it may first appear, or be more marked, amongst outlying sections of the people in contact with long infected nations, or the native may himself introduce it on his return from such an infected country, whither he had gone either to work or to fight. However it may reach him he is found with little or no resisting power, and if attacked his chances of recovery, or, apart from that, of maintaining a prolonged fight with the disease, are inferior to that of the man who has lived amongst it all his life.

You are all familiar with the figures showing a gradual increase in the percentage of positive results with the subcutaneous tuberculin test and with other tests which indicate that as age advances the percentage increases until in adult life all, or nearly all, give a positive reaction. It has been stated thus: "Children not born of mothers in an advanced stage of tuberculosis come into the world in most cases free from tuberculous infection. As each year advances a progressive number become infected until at the age of puberty a total of one-half is reached. By the time he is adult practically every individual is the bearer of a tuberculous lesion."

If we accept this view, are we to base our methods of dealing with the disease and our treatment of the individual patient upon the conclusions to which it inevitably points? This is not a merely academic question, it is one of vital importance to the clinician, as the following extracts show: "Meanwhile let us lose no time, but take all possible advantage of the scientific facts already established. Let these serve as a basis for concerted action in anti-tuberculous prophylaxis. Since every human being under present social conditions is exposed from an early age to bacillary infection, it is most necessary that children be kept under strict supervision, so that by means, for example, of tuberculin tests repeated every six months any recent contamination can be detected and its source determined."

Here again is the same view stated with equally absolute precision: "The future of tuberculosis prevention lies in the deliberate exploitation by immunisation by means of vaccinating doses of dead or attenuated bacilli." Is this the best way and the only way to obtain an A1 population? I think that before we can accept it we must know clearly the meaning of a positive reaction to these tests and also the significance of a "focal" reaction. Does a positive reaction imply that the disease is present or does it merely indicate that at some time in the life of the individual he has been infected with tubercle? A disease and the virus of a disease are not the same thing.

Colonel Bushnell, in a Study in the Epidemiology of Tuberculosis with special reference to Tuberculosis in the Tropics, writes as follows: "The cutaneous tuberculin test is of value in diagnosis if the result is a positive reaction. It is, however, likely to be negative in the class of cases which most require elucidation." It cannot be claimed that this is very helpful. He quotes Mirauer's [2] results of the examination of 145 non-tuberculous patients, of whom 128, or 88 per cent., gave a positive reaction, and also of 53 tuberculous suspects, of whom 46, or 87 per cent., also gave with 100 per cent. tuberculin a positive reaction. The positive percentages with 25 per cent. tuberculin were 79 and 77 respectively. In discussing Bandelier's [3] results in the examination of 500 sanatorium patients, Colonel Bushnell wisely remarks: "Whether all patients who react in so slight a degree are in need of sanatorium treatment is a question that might be raised by the critical." As one of the critical I venture to exercise that privilege.

Dr. Noel Bardswell, who has had an exceptional experience of this disease, in a paper on the Subcutaneous Tuberculin Test,[4] writes as follows:—

> "Failure to react to tuberculin does not exclude tuberculous disease."
>
> "In my opinion the test is not a means whereby the existence or absence of tuberculous disease can be determined. Neither when a tuberculous lesion is present does the test give any information as to its activity. Lawrason Brown and Heise have arrived at substantially the same conclusions." [5]

A "focal" reaction is, however, quite another matter; here there is a lesion the presence of which, if it is in the lung, can possibly be determined by physical or X ray examination. In a work on "Pulmonary Tuberculosis" (p. 260) I described the effect of tuberculin on a man of high resisting power and with the form of the disease which goes with such a high resisting power—i.e., fibroid tuberculosis—and what was the result? Four calcareous particles were expectorated, one surrounded by pigmented lung tissue; another portion of lung tissue; and one cavity was formed. It is usually wise not to disturb sleeping dogs. On p. 55 of the same work I mentioned the case of a man whose life for 40 years had hung upon the precarious integrity of a fibrous capsule around a caseous mass, and who, when the capsule gave way, was dead in 28 days from acute miliary tuberculosis of the lungs. Now combine these two cases and give the second man sufficient tuberculin to produce a "focal" reaction. What might and what almost certainly would have been the result? He would have been dead in a month. Focal reactions in cases of pulmonary tuberculosis are, in my opinion, not free from risk.

The almost universal prevalence of tuberculosis after a certain age has been reached is held to be further confirmed by post-mortem statistics, those of Naegeli being most often cited. It is obvious that without some measure of agreement as to what is to be accepted as a tuberculous lesion the figures of different observers dealing with different nations are likely to show a wide divergence. If a pleural adhesion is regarded as of equal value to a puckered cicatrix near the apex of the lung, with a pigmented fibro-caseous or calcareous nodule about its centre and compensatory emphysematous changes around it,

[2] Beitr. z. Klinik. d. Tub., xviii., 51.
[3] Ibid., ii., 285.
[4] Tubercle, July, 1921, p. 433.
[5] Twenty-four Years' Experience with the Subcutaneous Tuberculin Test, Amer. Jour. Tuberc., June, 1920, iv., No. 4.

then of two observers one may absolutely reject the former lesion—i.e., the pleural adhesion—as trustworthy evidence, whereas both would accept the latter. Yet I have heard it contended that a pleural adhesion is evidence of previous tuberculous infection. I have observed that the only subjects above middle age who are or may be entirely free from pleural adhesions are the subjects of general emphysema. In such cases on autopsy the lungs may come out of the thorax as readily as they do in the case of a child. How is this to be explained? For many years I made many post-mortems and evidence of arrest of tuberculosis was always sought for, but I was not "out" to find few or many such obsolete lesions, but to prove that they were tuberculous lesions. It is a dangerous thing to be on the look-out for evidence in support of a theory; if so, one is very likely to find it.

Some years ago my friend Sir John Rose Bradford, F.R.S., who during the whole of the war was consulting physician at the Etaples Base, when preparing the Lumleian lectures[6] (1920) on the Clinical Experiences of a Physician during the Campaign in France and Flanders, 1914–1919, asked me in what percentage of post-mortem examinations I should expect to find obsolete tuberculous lesions; my reply was, "In about 9 per cent." He said, "I thought you would say 90 per cent. It is curious that that is the exact figure obtained from an analysis of 2121 post-mortems at Etaples." The figures are as given in Table I.

TABLE I.—*Etaples Area, 1917–18.*

	No. of cases.
1. Post-mortem examinations	2121
2. Tuberculous lesions were found in	256
3. Death in these 256 cases was directly due to tubercle in	62
4. The total incidence of tuberculous lesions in the whole of the post-mortems made was 12 per cent.	
5. Obsolete tuberculous lesions were found in men dying from wounds or some other accidental cause other than tuberculosis in 9 per cent. of the total number examined.	

These figures are to me very interesting. Here we have a striking confirmation from an absolutely independent and trustworthy source of the accuracy of the figures of myself and Dr. Sidney Martin, F.R.S., published in 1891, which have hitherto been considered to be far too low. By assembling the three independent observations we get Table II.

TABLE II.

Date.	Source of material.	No. of post-mortems.	Obsolete tuberculous lesions in lungs.
1879–86	Middlesex Hosp. (Fowler).	1943	177 (9·0 %)
1890–91	Middlesex Hosp. (Martin).	445	42 (9·4 %)
1917–18	British soldiers in France (Etaples) (Bradford).	2121	191 (9·0 %)

The incidence of and mortality from tuberculosis among the native and British troops in France in 1918 is shown in Table III.[7]

TABLE III.

—	Annual case incidence per 10,000 of annual average strength.	Annual deaths per 10,000 of annual average strength.
South African Native Corps .	186	167
Cape Coloured Labour Corps.	444	88
Indian Native ,, ,, .	142	53
Chinese ,, ,, ,, .	36	12
British troops in France and Belgium	10	0·5

It is interesting to note that no obsolete tuberculous lesions were found on autopsy of the native troops; evidence of a lack of resisting power. We are all agreed that racial and family characters of body and mind, endless in number and variety, may be transmitted from one generation to another through countless ages from father or mother to son or daughter. The laws governing such inheritance are being slowly but surely worked out.

I account for the greater resisting power of the natives of certain countries to yellow fever or to tuberculosis by assuming that if all the minute details above referred to can be contained within their chromosomes, so also can a greater or lesser resisting power to disease, acquired by the contact of countless generations with that disease, be there and be transmitted. One individual may have high or low resisting power to disease in general, whereas another may have a high or low resisting power to a special disease, and such special liability may be evidenced by certain characters of the body and of the mind. The reason why it can be said that "Mary Jane brings all the catching diseases into our family" is that Mary Jane has a low resisting power to disease in general, but she may be quite free from any special liability to, say, tuberculosis, notwithstanding the fact that one of her sisters presents all the features characteristic of that liability. It is the modern fashion either to deny the existence of such indications or to minimise their importance. I am not suggesting that the disease itself is transmitted, as I have for years taught that in the case of private patients, that is of those whose former history can be most closely investigated, if it is thought to be worth the trouble, in the majority of such cases it is possible to arrive at a fairly accurate opinion as to how, when, and where infection occurred.

Tuberculosis, and especially pulmonary tuberculosis, is a disease the clinical course of which presents such wide variations and leads to such startling and unexpected terminations, either in death or recovery, that it requires almost a life-time to obtain such a knowledge of it as enables one to speak with even a semblance of authority. Amongst those physicians who have had this experience I have found but little divergence of view as to the existence of individuals of the type just referred to, nor have they any doubt that in England it is a type which is now steadily diminishing in numbers, but as between them and those who have not had this experience there is a wide divergence of view. Some families, Nature's masterpieces—survivals like Old Masters and the Classics from much rubbish—are endowed with such a high degree of resisting power that they persist through many successive centuries without manifesting any inherited tendency to disease. I am acquainted with a member of such a family from whom I learned that his ancestry has now been traced to three generations prior to 1300, and that in the elder branch of the family the succession from father to son has been unbroken through all those years. In this family to-day they think nothing of 80 years, and only begin to feel old at 90; about 96 they may die, apparently out of consideration for the claims of the rising generation.

I see no necessity to assume that Nature restricts herself to one method only in arming her most finished product against the microbial millions also of her fashioning, which to us are diseases, but which to themselves are species that must be maintained. I do not believe in the deliberate exploitation of immunisation by means of vaccinating doses of dead or attenuated tubercle bacilli as a method of creating an A1 population. I would rather strive in every possible way to improve the physique of the nation and thus to increase the resisting power of the people to disease, including tuberculosis. The fall in the death-rate from pulmonary tuberculosis in Great Britain began before modern sanitary measures had had time to operate, and it will be accelerated in that and other countries when governments appreciate to the full that the provision of healthy homes for the people is a matter far transcending in importance any other with which they are called upon to deal.

[6] THE LANCET, 1920, ii., 539.

[7] The Primitive Tribes and Tuberculosis, S. E. Cummins, Trans. Soc. Trop. Med., June, 1912, v., No. 7, 245.

Administrative Measures.—Notification.

I now pass on to consider administrative measures for dealing with tuberculosis in the tropics. If one is attempting to estimate the result of a method of preventing or treating a given disease it is obviously essential to ensure that the cases dealt with are really examples of that disease. In a booklet entitled "Problems in Tuberculosis," recently published (1922), I have given the evidence on which is based the statement that during the war 75 per cent. of the diagnoses of pulmonary tuberculosis in regard to the British troops were erroneous. Dr. Rist, of Paris, an authority on the subject, has confirmed my statement by citing similar facts in regard to the French troops, and in other countries the same error was made in a like proportion.

Whether notification of tuberculosis should be enforced must depend in the tropics upon the local conditions and upon the degree of civilisation to which the people concerned have attained. It is useless if the notifications, as is too often the case, are only received a short time before the death of the patient or after his decease.

The value of notification, apart from statistical inquiries, depends upon the use that is made of it in dealing with contacts and in removing them from unhealthy surroundings.

After-care committees and local tuberculosis centres are valuable adjuncts in any administrative scheme. The latter name avoids the use of the word "dispensary," which in Great Britain is regarded as a place where drugs are to be obtained.

Specific Remedies.

I have never met with a case of pulmonary tuberculosis in which I have been able to satisfy myself that any good had resulted from the administration of tuberculin, but I have seen many in which any chance of recovery that the patient possessed had been destroyed by its use. The time has been too short for a reasoned judgment on the value of Prof. Dreyer's diaplyte vaccine, but, speaking generally, opinion is not favourable. I have seen a case treated with it in which 1/200,000 of a milligramme induced a reaction followed by eight days of continuous fever, whereas previously the temperature had been for a considerable period hardly above normal. Like other forms of tuberculin, it is probably a measure of the resisting power of the individual. Before any clinical use is made of such a remedy or of anything of a similar nature which may be brought forward in the future, it is necessary that overwhelming evidence should first be produced that it confers immunity on animals. This appeared to me to be the weak point with regard to Prof. Dreyer's diaplyte, and subsequent investigations have shown that it does not produce any such result. The 1923 report of the governing body of the Lister Institute, of which I am a member, contains the following statement:—

"Dr. Schütze has in the past nine months tested the therapeutic value of Dreyer's diaplyte vaccine on tuberculous guinea-pigs. No evidence whatever has been obtained that the course of the disease in these animals is favourably modified by this treatment."

Sanatoria.

In temperate climes sanatoria at high altitudes present an undoubted advantage. In the tropics the conditions at such altitudes, if they are available, may or may not be suitable to a native population. The sanatorium should be situated on the healthiest site available and should be the nucleus of a settlement, as at Papworth Hall in Cambridgeshire. The other features of such a settlement appear in the following

Scheme for a Tuberculosis Settlement.

Sanatorium Department.—Diagnosis ward; clinical ward; operating theatre; visiting surgeon; X ray installation; clinical laboratory; sanatorium block; graduated exercise and graduated labour.

Hospital Department.—Hospital block.

Industries Department.—Huts; hostels; cottages; workshops: (*a*) training, (*b*) handicrafts; outdoor industries; sale of produce.

(*a*) *Diagnosis Ward.*—All patients on admission should pass through this ward, remaining there until the fact that they are really cases of pulmonary tuberculosis has been settled. On leaving this ward patients would be transferred to the sanatorium block.

(*b*) *Clinical Ward.*—This ward should be occupied by cases requiring close observation and those in the earlier period following the operation of artificial pneumothorax; which will in future play an increasing rôle in the treatment of the disease amongst the industrial classes.

(*c*) *Operating Theatre and X Ray Installation.*—These are essential, if artificial pneumothorax and the use of the thoracoscope form part of the treatment adopted.

(*d*) *Sanatorium Block.*—For patients going through the usual sanatorium course, but in whom arrest of the disease has not yet been obtained.

Hospital.—For advanced cases and such as do not respond to sanatorium treatment or who break down when engaged in the industries.

Huts and Hostels.—When the patient leaves the sanatorium and has been through his course of training it is no longer necessary for him to occupy a bed in an expensively equipped ward, and it costs much less to maintain a considerable number of two-bedded open-air huts. To be transferred from a hut to a hostel is a step in promotion; and a definite flow of promotion is one of the secrets of the successful working of a settlement.

Cottages.—For married men; a further step in promotion.

Workshops.—Training in industries carried on in hygienic workshops involves in temperate climes less exposure to climatic conditions, which may be harmful, than open-air occupations, but in the tropics such considerations may not apply.

A settlement, unlike a colony within a ring fence, forms part of the community as a whole. Main roads may pass through it. Its shops are open to all. Its industries employ such of the tuberculous as are capable of work, and many of them are so; their wages help to maintain themselves or their families; their work, if properly controlled, contributes to their health and promotes their happiness; the products of their labour are sold in the open market, and they are paid the wages customary in their particular industry, having regard to restricted hours of labour and to an output less than that of a healthy man.

The open secrets of the successful management of the industries of a settlement are: (1) All heads of departments must be men who have themselves gone through the tuberculosis mill. (2) There must be a prospect of promotion for all. (3) Repetition work which can be easily learned is the chief feature of the industries, whereas a new handicraft can only be acquired by long application. (4) All the heavy work must be done by machinery. (5) Every department must be run on business lines; a settlement is no place for amateurs. (6) The ideal head of a settlement is a physician with a flare for organisation and business.

The sanatorium is no longer the unit, it has become merged in the settlement.

That such a tuberculosis settlement is not a plague-spot, avoided by its neighbours, is shown by the following extracts from a letter from Dr. P. C. Varrier-Jones, the director of Papworth industries, and from many visits I am able to confirm his statements:—

"We have experienced no local objection whatever. Indeed, our village is so much more prosperous than those in the surrounding country that our inhabitants are, I hear, looked upon with green-eyed jealousy. Wages are better than in the villages, and the conditions superior, so that instead of opposition we have readiness to coöperate in trade and other ways."

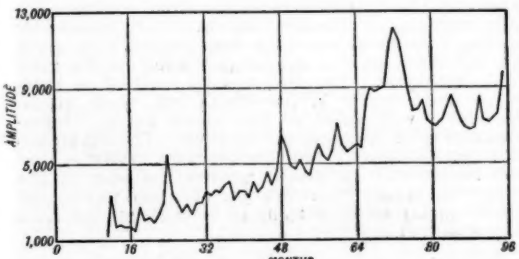
My advice to any colony disposed to grapple seriously with the tuberculosis problem is to destroy its slums and to start a tuberculosis settlement on the lines which I have herein suggested. Any country that rejects compulsory vaccination and retains its slums must pay for small-pox hospitals and tuberculosis settlements. The tuberculosis problem is to a very large extent a housing problem in all parts of the world.

"PERIODICITY" OF CHOLERA IN INDIA.

BY A. J. H. RUSSELL, C.B.E., M.D. ST. AND.,
MAJOR, I.M.S.; DIRECTOR OF PUBLIC HEALTH, MADRAS PRESIDENCY.

RECENT bulletins issued by the Health Section of the League of Nations show that at the present time India is practically the only part of the world in which cholera exists in epidemic form. India has, of course, been long recognised as one of the important centres for this disease, although it is doubtful if Bengal is the only "endemic home" of cholera in India as has so often been stated. But very little information of value has been recorded in connexion with its epidemiological features.

There can be no question that cholera has in India a regular seasonal periodicity. This feature of the disease has been indeed recognised wherever cholera has been experienced. Examination of the statistics for cholera deaths in the Madras Presidency over a long period of years showed that the annual periodicity occurred with the greatest regularity. When graphs were prepared by plotting the monthly number of deaths over this prolonged period this annual periodicity was not only demonstrated, but a longer periodicity wave became fairly obvious. J. Brownlee, the statistician with the Medical Research Council, has demonstrated the 87-week and 97-week periodicity in measles epidemics in a number of towns in England by a method known as the periodiogram analysis. This method has been applied to the cholera deaths for Madras Presidency for a peiod of 25 years, the statistics being arranged in three groups of districts, according to the periods in which these districts were affected by the different monsoons. In each of the three groups the annual periodicities are very apparent; but by far the highest amplitude is reached



Madras Presidency, Northern Districts Group: Graph showing monthly amplitudes over period 1902–21.

in each group at the 72-month period, which proves that cholera in Madras Presidency, for the period o years under examination, has gone through a regular six-yearly cycle. As far as the writer has been able to discover, no such periodic trend has previously been demonstrated in connexion with this disease, and the first question which naturally arises is whether the same periodicity holds good for other provinces or other endemic centres in India, or whether the harmonic curve is a mere chance occurrence. From work done during the last two months the writer is now in a position to state that the same six-yearly periodicity has occurred in Bombay Presidency, the Punjab, the United Provinces, the Central Provinces, and in Mysore over the period 1896–1923.

This fact seems to be of sufficient importance to have it recorded at the earliest possible date. Further work on the same lines is being carried out; but even if the conclusions arrived at hold good only for those enormous areas—which include the greater part of the Indian continent—it is a fact of far-reaching importance in connexion with the measures usually utilised for prevention of the disease. No mention has been made of the so-called "endemic homes" of cholera—viz., Bengal and Assam. The statistics for these provinces will be analysed later and the results published in a further communication, along with other work on the same subject. Meantime the mere knowledge of this six-yearly periodicity has enabled the public health department in Madras Presidency to control its preventive work in connexion with the disease, and has prevented waste of effort in unnecessary directions at unnecessary times. The graph shows the monthly amplitudes for one of the three groups of districts in Madras Presidency. The annual periodicities are quite obvious, but the most striking feature is the enormously high amplitude at the 72-month period. It is typical of the graphs obtained for the other two groups of districts in Madras Presidency, and also for those of the other five provinces mentioned above. Full details of the statistical work done and further points in connexion with the epidemiology of cholera will be published separately.

Clinical and Laboratory Notes.

A CASE OF HÆMOPHILIA.

BY W. B. BURKE, L.R.C.P. & S. IREL.,
HON. SURGEON, VICTORIA HOSPITAL, WORKSOP.

THE following case is interesting owing to the unusual position of the hæmorrhage, and the apparently unknown cause.

L. S., male, aged 18, was admitted to the hospital on August 12th, 1924, under my care. He was sent in as a possible case of psoas abscess.

On examination he was seen to have marked flexion at the right knee- and hip-joints with inability to move the limb at these joints; passive movement was very limited and caused great pain. The knee-joint was flexed to an angle of 45°. There was marked prominence of the right hypochondriac and right iliac regions, which on palpation suggested a large intra-abdominal tumour extending from the liver right down to Poupart's ligament. The whole area from the liver above to Poupart's ligament below and extending right over to the mid-line was dull. The skin over this area was normal. On examining the spine nothing abnormal was noticed and further physical examination elicited negative results. The boy was quite fit and doing his work up to three weeks before, when he first complained of stiffness in the right hip and numbness in the leg, as if the leg was "asleep"; he was then treated for neuritis. About three days before his admission he noticed a swelling in the right side which gradually increased.

Previous History.—At the age of 5 he had a tooth extracted and hæmorrhage of a severe character followed and continued at intervals for about two months. When 12 years old he had a further bad hæmorrhage following another extraction, after which he had to remain in hospital for five weeks. Two years later he sustained a blow on the leg which caused a large subcutaneous hæmatoma and necessitated his being in hospital for about two months.

Family History.—Of a family of four boys, one died in infancy of acute osteomyelitis of the femur, two others, still living, bleed extensively from the slightest trauma. One of these was under my care some months ago with a septic wound in the right forearm of a week's duration which had commenced to bleed violently. As none of the usual methods of hæmostasis acted successfully I tied the brachial artery, and in about seven days the pulse at the wrist was quite normal. The mother is healthy, but very anæmic in appearance; the father is healthy; the grandfather (maternal) usually bled on slight trauma and died from hæmorrhage following an accident in which his leg was badly injured. Remainder of family history on the mother's side unobtainable.

Operation.—On August 13th, 1924, the day following admission, the boy was given a general anæsthetic (C. and E.). I opened up immediately over the swelling, and on opening the anterior peritoneum I found a large tumour pushing forward the posterior peritoneum so that it was in contact with the anterior abdominal wall. The tumour had the appearance of a hæmatoma and filled up completely the

right half of the abdomen. As I was unable to make a full exploration through the small original incision I temporarily closed the wound. A mid-line incision was then made and the abdominal cavity thoroughly explored. The organs were normal, the tumour being completely retro-peritoneal. Concluding that it was a hæmatoma I decided to evacuate it through my original incision so I reopened it, and having opened the posterior peritoneum cleared out two kidney trayfuls of blood-clots. This left a large cavity which seemed to end in a cul-de-sac about the lower pole of the right kidney which seemed normal, and there was no damage to any of the surrounding structures to cause the hæmorrhage. On removal of these clots the leg became straight, as the pressure was removed from the iliopsoas. The cavity was then plugged with gauze and the abdomen closed. There was no undue hæmorrhage at any time during the operation. Later in the day he was in a poor condition and had to be kept on rectal salines.

On the 15th the cavity was replugged. The patient complained of severe abdominal pain. The following day there was a good deal of hæmorrhage from both wounds and the dressings were soaked through. The wounds were dressed with gauze soaked with adrenalin solution, and hæmoplastin, 2 c.cm., was given. As the hæmorrhage continued I gave him 20 c.cm. of human blood intramuscularly into the buttock, and later in the day a blood transfusion—12 oz. of type 4. He was kept on hæmoplastin and horse serum for a few days and hæmorrhage gradually decreased until August 21st, when it ceased. I removed the stitches on that date and both wounds appeared healed. On August 23rd bleeding recommenced from the lower end of the mid-line incision and caused the wound to open up. Two sutures were inserted and collodion dressings applied, which stopped hæmorrhage except for slight oozing. He was now given 20 c.cm. of horse serum twice daily, but on the 25th a further blood transfusion of 1 pint was given, owing to his poor condition. This made a marked improvement, which was maintained until the 28th, when a large hæmatoma formed in the mid-line incision.

On the 29th, under general anæsthesia, I reopened the mid-line incision and cleared out several large clots which had formed between the peritoneum and the skin and not involving the abdominal cavity at all. I plugged the space with adrenalin gauze and put in a few retention sutures. For a few days after this there was some oozing, but the cavity granulated up from the bottom and healed. At a later date he was given a course of massage and electrical treatment to tone up the muscles of the leg. For a time the extensor action of the limb was somewhat weak, but at the present time this weakness has disappeared and the patient now walks normally and appears to be in good health.

Following the first operation the liver dullness disappeared completely and remained absent for about three weeks, an incident I am unable to account for. On each previous occasion, where trauma or surgical interference took place, I am told by his mother that no hæmorrhage occurred for three days, and it is interesting to note that the same period elapsed in this case.

I have not been able to determine what was the primary cause of the hæmorrhage as the boy denies having met with any injury even of a trivial nature, but it seems quite feasible that he must have sustained some crushing injury in the right lumbar region.

COAGULEN (CIBA) FOR HÆMOPTYSIS.

BY ANDREW J. MORLAND, M.B., B.S. LOND.

IN the case here recorded arrest of severe hæmoptysis followed the intrapulmonary injection of coagulen (Ciba).

The patient, a strongly built male aged 33, entered the Palace Sanatorium at Montana on Feb. 14th, 1925. His tuberculous history began with a dry pleurisy on the right side in 1912. He appears to have recovered completely from this, as he served as an officer throughout the war, and was only in hospital for a few weeks after severe gassing in 1915. The patient began to cough towards the end of 1917, and tuberculosis of the right apex was diagnosed in 1918, the diagnosis being confirmed by the presence of T.B. in the sputum. Since 1918 sanatorium treatment has alternated with semi-invalid life at home. During the last year dyspnœa has been increasing, but in other respects the patient's condition has been practically stationary; he has been aware for some time that he had a large cavity at the right apex. The weight was 9 st. 7 lb., the highest known weight being 10 st. (in 1914).

On arrival the physical signs indicated the presence of a large cavity at the right apex; another cavity was suspected at the left apex, but X ray examination was typical of a localised pneumothorax just below the apex. The cavity at the right apex was seen to be surrounded by a dense fibrous wall. The patient complained chiefly of shortness of breath. For the first week or so the temperature (rectal) varied between 98·6° F. (morning) and 100° (evening). This gradually fell, and after four weeks of rest in bed did not exceed 98° in the morning or 99° in the evening. At this stage the patient was allowed to recline on a couch for an hour or two each day.

About a week later (on April 23rd) hæmoptysis of a pint took place between 10 and 11 P.M. The usual remedies were tried: absolute rest, injection of morphine, ice-bag, and tinct. of ergot. A hæmoptysis of 15 oz. followed between 4.30 and 5 A.M., and a further one of 23 oz. at 9 A.M. During this attack 5 c.cm. of coagulen (Ciba) were given by subcutaneous injection; the patient almost immediately began to experience unpleasant sensations described by him as a feeling of knobs appearing all over his body. The hæmorrhage gradually stopped about half an hour after the injection. At 1 P.M. the bleeding began again, about 12 oz. being lost in the first five minutes. At this time blood was welling up rapidly, about six mouthfuls being expectorated each minute; the patient had already, in about 15 hours, lost three and a half pints. Five c.cm. of coagulen (Ciba) were then injected directly into the cavity, over which bubbling râles were plainly audible. The spot chosen for the injection was the second intercostal space, about two inches from the margin of the sternum. The needle was inserted to a depth of about half an inch and the piston withdrawn, a mixture of air and blood immediately filling the syringe. The contents of the syringe were then injected; arrest of the hæmorrhage followed with dramatic suddenness, only one more mouthful of dark, partially clotted blood being expectorated. At 3 P.M., however, the bleeding began again; another injection of coagulen (10 c.cm.) was given in the same spot; the hæmorrhage stopped gradually about two minutes later, after a total loss of 10 oz.

During the following night there were two slight hæmorrhages of less than 5 oz., consisting mostly of clotted blood. Coagulen was not given. Recovery has been uneventful. The patient has regained his highest known weight (10 st.) and is able to walk two miles with ease.

Coagulen (Ciba), the substance used for injection, is prepared from the blood of animals. It consists chiefly of lipoids and is rich in thrombokinase. It has been used chiefly in surgery for the arrest of intractable hæmorrhage, as described by S. G. Papadopoulos in THE LANCET of Jan. 24th, but has also been given by subcutaneous and intravenous injection for cases of hæmoptysis. The intravenous method is more rapid and certain in its effects but tends to be associated with more or less severe shock. Intravascular clotting is said not to occur. The advantage of injection directly into the bleeding cavity is that the hæmostatic substance reaches the seat of the trouble in a high concentration while the unpleasant effects and possible dangers of intravenous injection are avoided.

Montana.

LEEDS: TRAINING HOSPITAL ALMONERS.—The Institute of Hospital Almoners has approved a scheme for training at the University of Leeds in coöperation with the Leeds Almoners' Training Committee, and grants towards the fees will be made by the Leeds Education Committee to candidates who are unable to meet the entire cost. The fee of the Institute of Hospital Almoners is 40 guineas and the training lasts for a minimum of two years. Hitherto London has been the only training centre, and it is obvious that the cost of residence there must deter many candidates from the provinces from qualifying for work of real importance to large hospitals.

WALKER ACCIDENT HOSPITAL.—This Newcastle-on-Tyne hospital dates from 1870, when it was established by the late Mr. Charles Mitchell, whose works were then the only ones in Walker. The recent transfer thither of the naval yard of Messrs. Armstrong, Whitworth and Co. has doubled the number of patients and additions and improvements had become imperative. These have now been made at a cost of £8000. Chief among the additions are an operating theatre and an X ray department, which, it is claimed, "cannot be excelled even by Newcastle Infirmary." This interesting little hospital has always been maintained by contributions from employers and weekly subscriptions from the operatives, who have agreed to double their contributions.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF SURGERY.

A MEETING of this Section was held on June 3rd, Mr. HERBERT J. PATERSON, the President, being in the chair.

GASTRIC AND DUODENAL ULCER.

Dr. CHARLES H. MAYO (Rochester, U.S.A.) delivered an address on this subject. He said that in the development of surgery the first necessity had been to secure relief from suffering. Many years ago it was recognised that contractions of the pylorus caused inflammatory conditions around ulcers, resulting in obstruction, starvation, and slow death. Patients were ill for too long a time for the disease to have been cancer. Billroth, after carefully studying the sufferers, did a resection of the obstructed area at the site of the pylorus, partially closing the end of the stomach, and uniting it to the duodenum. In the early days of these operations the mortality was about 70 per cent. This high mortality was probably largely due to the fact that no special effort was made to protect the suture line, for the "suture angle," where there were three lines of stitches, was a frequent cause of trouble, and the duodenum was always a bad bowel to suture. Leakage resulted in most destructive digestion of the sutures. In his second type of operation, Billroth closed the end of the stomach and did a posterior gastro-enterostomy. Hartmann and Mikulicz made a new opening posteriorly, drew over the end of the duodenum, and sutured it in. The operation was not taken up extensively, however, nor was that of Hahn, who forced the stump through the end of the stomach and found the subsequent contraction was worse than before. Then followed the Ramstedt operation, dividing the pyloric muscle without opening the mucous membrane. This, said Dr. Mayo, was a sound proceeding and was still successfully done in the case of children with congenital contractions of the pylorus.

Suture Operations.

In 1892 Dr. John Finney, of Baltimore, devised and carried out the operation of suture of the pylorus and upper duodenum to the greater curvature of the stomach, then, through a horseshoe incision, forcing down the suture line, and closing the outer suture line over it. Dr. Finney had largely given up this operation during the last three years, substituting resection and division at the pylorus, making a new opening in the anterior wall of the duodenum, and suturing into it the pyloric end of the stomach. Dr. Mayo thought this operation was not likely to be very widely adopted.

Mechanical adjuncts, such as the Murphy button and the Mayo Robson bobbin, had a vogue, and the former was still used for specially suitable cases, but most surgeons decided that they did not need these aids. Senn, of Chicago, introduced and used decalcified ox-bone plates, and they were employed throughout the surgical world, but gradually the improved methods of suture took their place.

Next came the Polya operation, by which large areas of the stomach were excised, the end of the remaining portion being attached to the jejunum. This was of wide usefulness, and was being largely carried out to-day; but at times one encountered a very short mesentery in the attachment of the transverse colon, and then it was necessary to carry out the anterior operation of swinging the jejunum over the loop of the transverse colon and attaching it to the divided end of the stomach. The foregoing operations were devised mainly for the treatment of cases of cancer of the stomach, and it was remarkable how small a portion of stomach left to the patient after the operation would distend and usefully function. Balfour modified the Polya operation by working anteriorly, so avoiding an area where the rich blood-supply might cause the cancer to grow with such rapidity as to kill the patient by obstruction.

Gastro-Enterostomy.

Gastro-enterostomy had been quite a successful operation, and in process of time it became a safe and efficient one in the hands of many. Indeed, it seemed to have been performed by some without means being taken to ascertain whether the patient's complaints really had origin in an ulcer, for the symptoms could well be produced reflexly from, for example, gall-bladder trouble. Patients with any abdominal trouble were apt to locate it in the stomach. In one case a patient who had been operated upon elsewhere came to him and he reoperated and found the anastomosis had been made to the stomach within 9 inches of the lower ileum, in another within 10 inches, in a third within 18 inches. The greater part of the food was passing through the gastro-enterostomy opening. In two of the three cases mentioned he was unable to find any sign of ulcer of the stomach.

Very few people had a jejunum which passed straight down from its point of origin. Nearly always the first loop was the splenic loop on the left of the colon. In operating for gall-stones it was useful to remember there was a 50 per cent. chance that one would encounter the third loop, as the first and second were on the left side of the stomach. The third loop crossed the spine and sometimes caused a secondary obstruction ten days or so after the operation.

Discussion on the defects of gastro-enterostomy had led to the development, on the continent, of the great operation of excision of the stomach. He had seen cases in which only a small ulcer of the duodenum was present, giving rise to symptoms in the spring and fall of the year, and for this two-thirds of the stomach had been cut away to ensure freedom from those symptoms. Surgeons, he felt sure, would not consent to such a procedure in the case of their own stomach in order to rid them of trouble occurring beyond the stomach.

Occasionally a large ulcer would develop carcinoma in one wall as a result of chronic irritation. Small ulcers were seldom found to cause this degeneration. Usually these ulcers formed in the areas of highest acidity. In men one-third of the cancers were in the stomach, very few in the small gut. Balfour investigated the records of 1000 consecutive cases of ulcer of the stomach and duodenum which had been operated upon more than ten years before; and he found that 90 per cent. of them could be regarded as surgical successes. In the remaining 10 per cent. were included such troubles as hæmorrhage, obstruction, and gastro-jejunal ulcer. Four per cent. developed gastro-jejunal ulcer when silk was used for the ligatures, and since that had been abandoned the figure was reduced to 2 per cent.

Nature of the Ulcer.

These ulcers were held to be due to the action of acids and pepsin, and were frequently termed peptic ulcers. It was somewhat difficult to explain the occurrence of an ulcer in an acid-free stomach. In such a case one should not be content with a single test; a second or third should be carried out. The reason for this was that acid came strongly 80 minutes after a meal, continued for 20 minutes, and then disappeared. Histamine injections would bring back acid to a stomach from which it had been absent a considerable time. This procedure was not a treatment, but it showed something was wrong with a hormone. Subjects of achylia suffered from troubles in the nervous system. Some children with this deficiency had gastric convulsions and gastric tetany. Dr. Mayor considered that people who had achylia and ulcers for a long time had something wrong in the nervous system, and they were not likely to be greatly relieved. Inasmuch as these people had no acid or pepsin their ulcers were not likely to perforate. Patients with achylia had headache and other distressing conditions because of the alkalinity present.

Production of Ulcers.

Dr. Mayo said ulcers could be produced by large doses of drugs, also by bacteria. A dog, in experimental work, developed a reaction on receiving a chill and ulcers formed, but did not persist. But if the dog had chronic bacterial infection the ulcers continued. With regard to chemically produced ulcers, in most dogs a duodenal ulcer could be caused by separating the common from the pancreatic duct. If the lower duodenum were divided and united to the ileum, so short-circuiting the jejunum, there would be a large number of duodenal ulcers, and these would persist three weeks. Dr. John I. Hunter, a brilliant young anatomist, who recently died, showed that the sympathetic system used 75 per cent. of the total energy of the body; and he undertook an investigation on the proportion of muscles of the body which had only the power of fixation. On occasion these muscles went into a condition of spasm, and caused intestinal troubles. Sometimes cardiac spasm occurred and lasted years, and was cured by an over-stretching of those muscles. There might be present a particular spasm of the pylorus due to a food idiosyncrasy; this was obstructive and hindered the emptying of the viscus. Under normal conditions the pylorus was closed, opening under the influence of the alkalies below it. When the fluids of the liver and pancreas were deflected into the ileum, an ulcer arose in 70 per cent. of the cases.

The question of possible hæmorrhage entered largely into the selection of the operation to be done in a particular case. Hæmorrhage occurred in 24 per cent. of cases of ulcer of the duodenum, but in only 8 per cent. was the bleeding serious in degree. People with bleeding ulcer were best left to recover of themselves; they might go for any period from one to four years without further bleeding and then suddenly there might happen a severe attack of it. Perforation did not often occur in these cases. A point which would have to be decided in an individual case was whether the patient would suffer in the same way as if he had an active ulcer without hæmorrhage. These cases did well after gastro-enterostomy had been carried out. He did not think the hormone had much to do with the causation of this condition.

Conclusion.

In conclusion, Dr. Mayo said he thought doctors were more liable to acquire the closed mind than were most people. Travel had the effect of lessening the respect felt by a man for his own opinions; and he had been witnessing in this country beautiful operations which were done in a way quite different from that he was accustomed to. There were "many ways of going to the post-office," and the essential aim in surgery was to accomplish the needed result with the least possible danger to the patient.

The PRESIDENT exhibited by means of the epidiascope slides depicting the Mayo Brothers and views of their celebrated clinic and hospital.

On the motion of Sir JAMES BERRY (who received an ovation on his recent knighthood), seconded by Mr. CYRIL NITCH, a cordial vote of thanks to Dr. Mayo for his address was carried by acclamation.

SECTION OF EPIDEMIOLOGY AND STATE MEDICINE.

AT a meeting of this Section held on May 28th, Dr. JOHN C. MCVAIL, the President, in the chair, Dr. JOHN BROWNLEE read a paper on the

Health of London in the Eighteenth Century.

Dr. Brownlee first of all exhibited tables making it probable that there was a considerable influx into London towards the end of the seventeenth century, but that thereafter, down to the end of the eighteenth century, the population was almost stationary and that the general rate of mortality (making allowance for the ageing of the immigrants at the end of the seventeenth century) also changed very little. In a general way, there was not much difference between eighteenth-century London and the most unhealthy urban area for which a life-table had been constructed in the nineteenth century—viz., Manchester township. Dr. Brownlee called attention to the increased proportional mortality from phthisis which the London Bills exhibited, and concluded that there was probably a real increase of phthisis in the last decades of the eighteenth century. He illustrated on the plague statistics of Bombay the movement in time of the maximum of an epidemic, and pointed out very remarkable changes in the seasonal incidence of mortality from convulsions and infantile diarrhœa in London. Mortality from measles was also illustrated.

In opening the discussion, Dr. MAJOR GREENWOOD referred to the writings of Woolcombe, Sir Gilbert Blane, Sir James Clark, and Farr on the alleged increase of phthisis at the beginning of the nineteenth century. Blane's remark (made in 1815) that "consumptions have been observed to be more frequent of late among young adults, probably from a greater number of sickly children being saved," was of interest.—Dr. T. P. BEDDOES thought the timing of an epidemic of plague was mainly dependent on the date of movement of stocks of grain.—Sir GEORGE BUCHANAN wondered whether the nomenclature of diseases in the Bills was sufficiently satisfactory for comparisons.—The discussion was continued by Dr. A. K. CHALMERS, Dr. JOHN CARSWELL, and the PRESIDENT, who all congratulated Dr. Brownlee on the great value of his contribution to the history of mortality in London.

SECTION OF LARYNGOLOGY.

ON June 5th the Section of Laryngology held its summer meeting, and the whole day was taken up with papers, discussions, and the exhibition of cases. The chair was occupied by Dr. A. LOGAN TURNER, President of the Section. Among the visitors welcomed by the President were Dr. TAPIA (Madrid), Prof. BURGER (Amsterdam), Dr. CHARLES MAYO (Rochester, U.S.A.), and Dr. GRAHAM BROWN (Brisbane).

Dr. TAPIA read a paper in French on the Big Pharyngostomes as an Accident in Laryngectomy, how they could be avoided, and a method of closing them.

Sir STCLAIR THOMSON said Dr. Tapia's paper was founded on a very large experience, as he had done 151 laryngectomies. Before the war, when less was known about plastic surgery, one sometimes had to wait three months before the stoma closed.

Mr. WILFRED TROTTER spoke on the subject of

Plastic Surgery in the Treatment of Malignant Disease in the Pharynx and Larynx.

He said the time had now gone when one could contemplate the removal of a malignant growth in this region and leave the patient to struggle with the necessary mutilation which ensued. The surgeon must consider, before undertaking such an operation, in what condition the patient was finally to be left, perhaps he must consider whether the kind of life it would leave him with would be worth having. The object of such plastic procedures was a double one. First, to restore as far as possible speech and swallowing. No one, he thought, could be content with surgical treatment of malignant disease of the pharynx and larynx which did not offer the patient a reasonable chance of maintaining to some degree his natural powers of speech and swallowing. Secondly, it was very important not to leave the patient immediately after the operation with any extensive raw surface upon which infection could occur, with its dangerous sequelæ of cellulitis in the neck and secondary hæmorrhage. In a favourable case of post-cricoid carcinoma the patient could be speaking and swallowing normally six weeks after the primary operation. Regarding the pharynx and larynx as a whole, there were four regions in which a plastic operation was needed and was practicable. The simplest case was that of carcinoma of the posterior wall of the pharynx, yet one could not remove even a small

piece of this posterior wall without leaving a gap which had all the dangers of a raw wound. But a large section of posterior wall of the pharynx could be excised, and a flap of skin placed over the area, and the subsequent fistula could be closed in about three weeks. Plastic reconstitution was also needed after dealing with a growth in the near neighbourhood of the upper opening of the larynx when it was necessary to remove the party wall between the larynx and pharynx. In this case the division between larynx and pharynx must be reconstructed out of flaps of skin. Thirdly, plastic methods were needed when dealing with tumours of the larynx itself. The question had been discussed whether the whole larynx should ever be removed; certainly one could leave alone half or one-third of one cord, or even one arytenoid, without diminishing the chances of the patient. The raw surface should be lined with skin, then quite a good voice was generally preserved. The fourth region he referred to was the post-cricoid. A growth here could not be removed without doing a complete section of the cervical œsophagus. And the gullet must be reconstituted, otherwise there would be stricture, and the patient's convalescence would be a dangerous one. By preparing beforehand and doing immediately after the operation a plastic procedure, the patient was enabled to swallow normally.

Rules of Guidance.

Mr. Trotter said the surgeon must know before operating what kind of tumour he was about to deal with. He did not consider that the classification of these tumours of the œsophagus had received due attention. They could be separated off into exactly marked classes, so that the surgeon by examining the patient could recognise what kind of operation he was about to enter upon. Good plastic work could not be done in the pharynx and larynx unless a reasonable degree of asepsis could be secured. Otherwise there would be a good deal of scarring. There was reason for expecting much better results in edentulous patients than in those having many teeth, however healthy.

Mr. LIONEL COLLEDGE related a case bearing out Mr. Trotter's final contention as to the importance of these patients having all teeth removed. The patient was very reluctant to have more than one or two teeth removed, and the very partial success of the laryngo-fissure until all the teeth had been extracted, when there was no further hindrance, was very striking.

Sir JAMES DUNDAS-GRANT asked whether any members who operated on cases of the kind had ever attempted to allow them to heal by the open or partially open method. He was interested to note that when Mr. Trotter did a lateral pharyngotomy he stitched the deeper parts, but only partially closed the superficial part, so as to permit of the escape of secretions.

The Care of Diseased Conditions of Pharynx, Larynx, and Mouth.

Dr. CHARLES MAYO delivered a short address on this subject. He said that brief immersion of the unfertilised eggs of some lower types of life into sea-water to which had been added 1 per cent. butyric acid resulted in their fertilisation to a high degree, and this was interesting as showing the chemical side of stimulus to cell growth. In thinking of infection by a particular kind of organism it was well to inquire also what was the chemical composition of it and its place in the world. Warts and papillomata of mouth, vocal cords, bladder, rectum, and other parts, if irritated and subjected to ineffectual attempts at removal, became liable to malignant development. During the last two years in America there had been many cases of chronic hiccough, lasting three or four weeks. From the pharynx of these cases material was obtained which, when injected into rabbits, caused the same type of trouble. In people suffering from the somnolent form of encephalitis there was a redness of the pharynx, and as it was likely the mucous membrane of this region was very suitable to the causal organism, more attention should be paid to the mouth region in this disease. He believed that in his father's day ordinary clinical observation was carried to a higher perfection than in these days of elaborate laboratory and other aids. Sometimes the examination of a patient by the doctor did not include that of the tongue. The powers of observation to-day seemed to be slipping away. The large tonsil was never responsible for anything more than temporary trouble; the intermediate and the small tonsil were the danger, for in their crypts, unsuspected, they were harbouring an infection which was constantly being put into the blood-stream. The killing of tooth nerves by the dentist and the filling and crowning prevented the patient from feeling the danger-signal of pain when he had a septic focus in this region. In America there had recently been a tremendous increase in heart disease and in infections, and post-mortem examination seemed to show that much of this was fundamentally due to the teeth. Work had recently been done at Rochester on the production of stone in the kidney. Germs obtained from the grinding of bicuspid teeth of 12 people suffering from stone in the kidney were injected into animals, and in three months the X rays showed the beginning of most beautiful apical cavities in the bone, and in seven to nine months the rays showed stones in the kidney, of the same composition as those taken from the human subjects. In middle and late life people had troubles which were not due to pure infection, but to alterations of blood found at that period. Calcium was a great necessity, and he would like X ray pictures to be taken of teeth and jaws not only to see the amount of infection, but also as to the way Nature was handling her calcium in infected areas. There were periods of life in which we were resistant to certain infections. When a break came, a change was seen in the person's colour and appearance, so that it was not uncommon to see an old friend who seemed to have gone to pieces in the last two years due to a "blood break." The leucocytes of such a person would probably be found to be down to 55 per cent., or anything from that to 70 per cent. Inheritance was really a question of the degree of resistance, and how long the movable soil, the blood, could be maintained at the high degree of efficiency which enabled it to deal successfully with infections. A study of family history supplied an inkling as to what had specially to be contended with. After 40 years of age a trouble arose to which very little attention had been paid. In the case of every man over 45 massage of the prostate and seminal vesicles gave a fluid which contained one to three varieties of bacteria, not gonococci. And a woman who had a very large cervix was carrying organisms not in the mucous membrane—though two or three varieties were there always—but just behind the mucous membrane. It might be the type of germ which would produce fibroids, as he did not doubt that fibroids were produced by chemical irritation originating in bacteria which did not raise the temperature. One should not give up treating cases of rheumatoid arthritis and chronic conditions of the nervous system without testing and investigating in this newer field—the cervix in women, the prostate and the seminal vesicles in men.

Speech After Laryngectomy.

Prof. BURGER read a contribution on the means of restoring to patients whose larynx had been completely removed some measure of speech, and brought with him a male patient on whom this operation had been done, for the meeting to judge of the effects of the means employed. Prof. Burger formed a pseudo-glottis at the mouth of the œsophagus, and during quiet respiration the mouth of the œsophagus was always wide open. The patient gave a remarkable demonstration of his powers—modulating his low-pitched voice, whispering, whistling, smoking, and ejecting the smoke through his nose, &c. After

fatigue, such as after going upstairs, the voice was appreciably weaker. His efforts were far less successful when he was not wearing a stiff collar to give support to the neck. After each few words the act of swallowing had to be carried out.

Mr. LIONEL COLLEDGE demonstrated the McKenty-Western artificial larynx, and exhibited two patients who were using it. A pad fitted over the opening of the trachea was fixed in position by means of tapes, which were passed under the axillæ and round the neck. In other respects this artificial larynx closely resembled that of Dr. Tapia, except that the chamber was a little larger than his, and there was a screw by which the tension of the membrane could be adjusted. He described the operations which were done on the two patients, one last year, the other four years ago.

Mr. R. GRAHAM BROWN (Brisbane) also exhibited an artificial larynx. He said the great difficulty in these cases was to overcome the escape of saliva around the opening of the artificial larynx. So great was the discomfort due to this that most surgeons were content to do without aids to voice production. By means of the apparatus now shown an excellent voice resulted, which filled an ordinary room, the apparatus was cheap, and there was very little escape of saliva over long periods. The speculum was of gold, as silver was subject to erosion.

Dr. TAPIA showed his apparatus which he designed for the same purpose. He said the ideal of function was to speak without the help of apparatus. He had several patients who, after laryngectomy, could speak as well as Prof. Burger's patient. By means of his own apparatus patients could speak correctly on the third day. One, a lawyer, continued in the practice of his profession without any unusual fatigue. Dr. Tapia and his son proposed to make a subcutaneous tubular connexion between the neck and the mouth to replace the tube which the patient now placed in the mouth.

Sir JAMES DUNDAS-GRANT showed a young female patient whose larynx he removed two years ago and who now had no voice whatever. She had, however, such remarkably clear articulation that she could be well understood and was able to do her own shopping without writing her wishes.

Prof. BURGER, in reply, said his patient was not an exceptional case, and the mechanism of speech was the same as that in the normal man.

Tracheotomy in Tuberculous Laryngitis.

This subject was dealt with in a paper by Dr. RITCHIE RODGER. In November last, he said, in a discussion at a meeting of the Section, Sir StClair Thomson suggested the more frequent use of tracheotomy in cases of tubercle of the larynx. Dr. Rodger now narrated four cases in which tracheotomy was urgently called for in order to avoid a fatal issue. The root treatment of tuberculous disease in all parts of the body capable of movement was to place the affected parts in a state of physiological rest as far as possible. Resting the voice completely was very important in laryngeal tuberculosis, but there was a movement of the larynx during every act of deglutition also, not only in taking food, but in swallowing saliva, as well as the usual small movement during respiration, and closure of the glottis during a number of forced muscular actions. Records given by Sir StClair Thomson and others showed that the normal lung was not prejudiced by the wearing of tracheotomy tubes. He agreed, however, that a patient wearing such a tube found difficulty in getting rid of his sputum. When the disease involved only the mucosa there seemed no reason to expect that the wearing of the tracheotomy tube would have to be continued for very long.

Sir JAMES DUNDAS-GRANT thought that in the cases described by Dr. Rodger the procedure of tracheotomy was called for and was fully justified. But one would hesitate to do it where there was no serious stridor or obstruction. Much would depend on the condition of the patient's lungs, and if they were only slightly affected tracheotomy could be done. The maintenance of absolute silence gave extraordinarily good results in many cases of this disease.

Mr. E. D. DAVIS said he and his colleagues always tried to avoid tracheotomy for the condition for two reasons. One was because the tracheotomy wound became very septic, and the other was that the patient had a good deal of coughing, and it was this which did most damage to the larynx. Rest was the most important necessity.

Sir STCLAIR THOMSON said he considered that tracheotomy, as a curative method, was seldom called for in tuberculosis. In 450 cases of tubercle of the larynx at Midhurst Sanatorium, he had had to do tracheotomy for dyspnœa to save life only two or three times. One patient, a doctor, declined it when it was recommended to him, but later he had to have it done, and shortly afterwards he died. People could have tubercle and die of it without tubercle bacilli being found in the sputum.

Dr. P. WATSON-WILLIAMS said tracheotomy gave much relief in this disease when there was considerable dyspnœa, but he had never seen a case in which one could imagine it would be a means of saving life for more than a short time. He thought the disadvantages alluded to by the reader of the paper outweighed such advantages as could be attributed to tracheotomy.

Dr. DOUGLAS GUTHRIE spoke of a case in which a woman with advanced tuberculosis of the lungs was in danger of asphyxiation in the early stages of labour. Tracheotomy was performed four hours before the birth of the child, and the subsequent course of the labour did not seem to have been adversely influenced.

Intranasal Dacryocystostomy.

Dr. J. S. FRASER (Edinburgh) read a short paper on this subject. He said that often patients with dacryocystitis did not come for treatment until the disease had reached an aggravated form, with much dilatation of the sac by muco-pus, or with a tear-sac abscess. Dilatation of the tear passages by frequent probing was mostly ineffective, and only moderate success attended the use of drainage threads. Most ophthalmic surgeons seemed to prefer to excise the tear-sac completely; but following this there was persistent eye-watering. Dr. J. V. Paterson, of Edinburgh, found the best results followed the intranasal operation. In 47 operations the duration of the dacryocystitis varied from three months to 20 years, and most of the patients were between 30 and 50 years of age. The majority of the patients had had previous treatment by dilatation of the punctum and canaliculus, washing out of the tear-sac, and the passage of probes into the nose. The trouble had probably been due to infection having passed up the nasal duct into the nose. Dr. Fraser described the operation in detail. No after-treatment was necessary, and the average stay in hospital was only four days. Recurrence of the dacryocystitis took place in about 25 per cent. of the cases, and when this was less than two months after the operation it was due to failure to remove enough of the inner wall of the tear-sac.

Mr. J. B. HORGAN (Cork) said he had been doing for a period of 12 years the operation Dr. Fraser had described, and his experience corresponded in the main with Dr. Fraser's. But he did not do it under general anæsthesia; he put into the sac a few drops of cocaine and adrenalin solution. He found it a considerable advantage to resect the anterior part of the nasal septum in every case; it gave to the operator a better field, and no harm seemed to come of it. The stenosis met with in the naso-lacrymal duct he believed to be due to a latent infection of the anterior ethmoidal cells. He showed the instrument he used.

Mr. LAWSON WHALE considered that if it was felt necessary to resect the septum, this should be done as a separate preliminary operation, never at the

same time as the primary one. Pressure on the inner canthus should not be by the finger, as mentioned; it was much better to use a large-sized bone probe for forcing the bone. To obviate slipping, he had devised an instrument like a golf mashie, but turned back the wrong way. His own criteria of success were: That if after the operation the eye never watered in a strong wind outside, it was a complete success; if it did not water except in a strong wind, it was a modified success; if it watered at all, even indoors, it was a failure.

Mr. A. J. M. WRIGHT (Bristol) contended that there was no need to do the septal operation at a time other than that of the primary operation.

Mr. J. W. HARRISON said the bone should be removed in only thin pieces. Otherwise there would be splinting and extra granulations formed. His practice was to make a large hole from above downwards, then re-formation rapidly took place. The operation should not be done when the condition was in an acute stage, but when it had definitely begun to subside.

Mr. E. D. DAVIS said his colleagues at the Westminster Ophthalmic Hospital were not very satisfied with the results in these cases, especially those which had an acute suppuration of the lacrymal sac. And the chronic cases were liable to have stenosis of that sac, and the operation had to be done again.

Dr. GRAHAM BROWN, speaking as both an ophthalmic and a nose surgeon, said he had no compunction in doing the external operation. There were considerable difficulties connected with the internal operation. He did the operation under local anæsthesia.

Dr. FRASER, in the course of his reply, agreed with Mr. Whale's criteria, and said the cases he classed as successes had no watering of the eyes in any weather, either indoors or out.

The Sinus Condition in Encephalitis Lethargica.

Dr. A. LOWNDES YATES, in a paper on this subject, said that in the cases investigated the pneumococcus or the bacillus of Friedländer was usually found, and in all the patients there was rhinitis and sinusitis generally affecting the mucous membrane in or around the posterior group of sinuses, chiefly the sphenoidal. The membrane seemed to have lost its function, there was ciliary paralysis, and fluid put into the posterior part of the nose was not removed by the ciliated epithelium. Mucus was absent, and the sinus contained a material, not colloid, resulting from the digestion of the normal mucus by bacterial action. There were comparatively few sufferers from encephalitis lethargica, but many carriers. The filter-passing virus seemed to need to fall upon mucous membrane which had been altered by influenza or chronic rhinitis in order to produce the symptoms of the disease. Treatment of the nasal condition by eucalyptol and paraffin seemed to have been distinctly beneficial and was worth a trial.

Dr. P. WATSON-WILLIAMS regarded this as pioneer work, and said it was necessary to carry the work further before one could feel one was on sure ground. One real difficulty was to be sure of the diagnosis of encephalitis lethargica.

Demonstrations.

Dr. LOGAN TURNER and Dr. F. E. REYNOLDS submitted a contribution illustrated by a number of slides to show the path of infection in a case of nasal furuncle which led to thrombosis of the cavernous sinus. The patient's temperature reached 106° F., the eyeballs were immobile, and he died after a fulminating illness of only seven days' duration. The post-mortem examination showed that the frontal and the maxillary sinuses were normal and that a septic thrombus of the superficial plexus, passing into the ophthalmic vein, led to the detachment of a small septic thrombus, which was caught up in the cavernous sinus and caused a septic thrombosis. Dr. Reynolds demonstrated the photo-micrographs.

Mr. COLLEDGE gave an instructive demonstration by kinematograph of an experiment carried out on a gibbon by Sir Charles Ballance and himself. Anastomosis of the phrenic nerve restored the mobility of a cord which had been paralysed.

Clinical Cases.

At the afternoon session a large number of cases were demonstrated and discussed.

Dr. DOUGLAS GUTHRIE showed a man, aged 30, with a tuberculoma of the tonsil. He had never had tonsillitis nor any chest symptoms. Wassermann was negative. The tumour was dissected out and was limited by the tonsillar capsule. It was of the size of a walnut. The microscopic section exhibited revealed chronic fibrosis and numerous typical tuberculous deposits.

Dr. JOBSON HORNE showed a man, aged 63, who had complained of his throat for ten years, but there was no voice impairment. Pharyngitis explained the throat symptoms. On the right vocal cord was an excrescence, and on the left cord, at the vocal processes, a dimple.

Sir JAMES DUNDAS-GRANT showed the specimen of an extrinsic laryngeal epithelioma which Mr. Wilfred Trotter removed from a man aged 57.

Mr. C. A. S. RIDOUT exhibited a male patient, aged 53, on whom he did a laryngo-fissure for squamous-celled carcinoma of the left vocal cord in February, 1922. A recurrence five months later was removed by complete laryngectomy preceded by tracheotomy. The patient had since remained in excellent health.

Mr. HERBERT TILLEY showed a man, aged 20, whose tracheal stenosis following diphtheria in infancy had been treated by a dilator formed by fine air-filled drainage-tubes. With the cannula corked the patient could breathe through the larynx for five hours at a time. He also exhibited a female patient whom he had cured of tuberculous laryngitis by means of galvano-puncture.

Several cases were also shown by Mr. LAWSON WHALE, Mr. F. F. MUECKE, and Dr. DAN MCKENZIE.

MEDICAL SOCIETY FOR THE STUDY OF VENEREAL DISEASES.

A MEETING of this Society was held at the rooms of the Medical Society of London on May 29th, Colonel L. W. HARRISON, the President, in the chair, when the subject for discussion was the

DIAGNOSIS AND TREATMENT OF VENEREAL DISEASES IN PREGNANCY.

Sir HENRY SIMSON, in opening the discussion, said he hoped chief attention would be devoted to gonorrhœa in pregnancy, as it had received less attention of late than had the complication of syphilis.

Gonorrhœa in Pregnancy.

Dealing first with gonorrhœa, he said that a woman who contracted gonorrhœa at the same time as she became pregnant could be considered lucky so far as the disease was concerned, because the path to the peritoneal cavity soon became closed, and valuable time was allowed for the cure of the gonorrhœa before parturition took place, and mostly, when adequate treatment had been given, a normal child was born at due time. It was a different story if a woman became pregnant subsequent to contracting gonorrhœa, and these were the cases which were so often seen at the V.D. clinics. Here the woman had had gonorrhœa for some time, but, with douching and permanganate irrigation, she had remained comfortable. When pregnancy set in, the congestion and the reactions of the pregnancy immediately set up an acute recrudescence in her of the gonorrhœa. The disease was now no longer confined to the vagina, the whole cervical canal was involved, and probably the uterine cavity too. And such a woman was more difficult to treat and was very liable to miscarry. Miscarriage was a very serious complication of gonorrhœa. In a nulliparous unmarried woman gonorrhœa was an eminently

curable condition; there was no husband to treat, and intercourse was easily prevented. It was of the utmost importance to cure these women before they became pregnant. Over 75 per cent. of cases of pelvic gonorrhœa were in women who had become pregnant with an uncured gonorrhœal vaginitis. Whenever a pregnant woman complained of leucorrhœa it was essential that she should be examined most carefully so as to exclude gonorrhœa if possible: this was the stage at which the diagnosis should be made and when treatment was most hopeful. The most likely place in which the gonococcus was to be found was in Skene's tubules and in the urethra, and it should be sought by direct examination of a specimen obtained by the platinum loop; it would be useless to send specimens to the laboratory as the organisms would not survive.

Ambulatory Treatment.—When a pregnant woman was found to be suffering from gonorrhœa, it was unavailing to attempt ambulatory treatment; the patient must be kept in bed for at least three weeks. The disease might then be cured before the pregnancy came to an end.

Syphilis in Pregnancy.

Sometimes a woman gave birth to a syphilitic child without herself having had obvious symptoms of the disease. On the other hand, pregnant women sometimes had very severe secondary syphilis. He still believed that fœtal infection was not always transplacental. There were four classes of cases to be dealt with. In the first class a woman contracted syphilis at the same time as she became pregnant, and in the second she contracted the disease subsequently to becoming pregnant. In these kinds of case the fœtus was infected through the placenta, and the woman had been infected by a man when he was suffering from a primary sore or from secondary syphilis. In the third class of case the woman had had syphilis some time before becoming pregnant, and when the latter event occurred she showed no fresh symptoms of syphilis. Here also she infected the fœtus through the placenta and gave birth to a syphilitic child, although her husband might never be infected. In the fourth class the same sequence held good. A man was an old syphilitic; he might live with his wife for a year without infecting her, but when she became pregnant the embryo was syphilitic through parental infection. The symptoms of the disease in the mother were markedly modified and were often difficult to detect. From the standpoint of the public health it was very important to ascertain what was the result of treatment in these four classes of case. What was likely to be the result of treatment on the fœtus? The prognosis in regard to the fœtus in the first and second classes he considered to be much better than in the third and fourth. If a woman with acute secondary symptoms were properly treated before the fifth month of her pregnancy she was almost certain to have a healthy child with a negative Wassermann. And a woman infected after the third month of pregnancy would probably have a healthy child, as the shortness of time and the placental barrier protected the fœtus. Were the cases of juvenile general paralysis likely to be more numerous because an 80 per cent. mortality from infantile syphilis could be prevented?

Gonorrhœa and Pregnancy.

Mr. ALECK BOURNE said he saw the patient with venereal disease who was pregnant because of her venereal disease, and his remarks would be confined to pregnancy complicated by gonorrhœa. In pregnancy there were two sharply defined types of gonorrhœal case. One was the acute case, in which the patient contracted the disease after becoming pregnant. In these there was frequently an acute vulvitis, with œdema of the labia, a muco-purulent discharge, pain, frequency, and smarting in connexion with micturition. This type was less frequent than the chronic type, in which there was but little exacerbation of the condition of gonorrhœa, and the patient had perhaps been infected for years by the gonococcus before becoming pregnant. In this form his experience had been that after a few weeks of pregnancy the gonorrhœa had settled down, the symptoms disappeared, and it was very difficult to detect the condition by clinical methods. It was commoner to find the gonococcus in patients who had only a mucoid discharge than in those in whom the discharge was purulent. If a specimen taken from the patient was positive in regard to gonococci, the cervical canal was swabbed out with a 10 per cent. solution of formalin; this was a very penetrating solution for the tissues, and was a very efficient bactericidal agent. The vagina was swabbed out with picric acid and the urethra with protargol. An aid to the diagnosis of gonorrhœa in pregnancy was the effect of treatment—i.e., the rapidity with which the discharge cleared up under treatment. A large number of patients with uncured gonorrhœa in pregnancy went through their gestation and puerperium without anything abnormal occurring except, perhaps, a transient rise of temperature during the puerperium, and a little sapræmia. But in others there seemed to be a good deal of danger to the patient, though in actual fact the danger in pregnancy was slight. The uterine ostea and Fallopian tubes were closed at an early stage of the pregnancy and the peritoneal cavity was thus sealed off. The only case of general gonococcal septicæmia during pregnancy he had seen was that of a patient who became infected with the disease during her pregnancy, and she died of the generalised disease. After labour the child's eyes were treated with a 1½ per cent. solution of silver nitrate, which was on the strong side; perhaps 1 per cent. was equally good. His experience was that the gonococcus only gave rise to acute salpingitis if it was accompanied by the streptococcus. If the gonococcus alone was responsible for a salpingitis, his view was that it came on much later than the seventh day of the puerperium.

Dr. DOROTHY LOGAN spoke of her experiences at the Mothers' Hospital at Clapton, where mothers came in for their confinement. They entered the institution three or four months before the event and stayed for some time afterwards. An acute case of venereal disease in pregnancy was put to bed. A routine treatment for the gonorrhœal cases was to swab well with protargol. Combined with glycerine she had found it most useful. A pack of 10 per cent. protargol was left in situ. In dirty cases this treatment was applied twice daily. She did not pack the cervix, but applied protargol as high as she could. Cases seemed to clear up better, on the whole, if the treatment was reinforced by vaccines. She had not seen many cases of acute complication in the tubes, nor of sepsis associated with pregnancy. Cases of venereal disease treated for some time before labour showed, on the whole, less morbidity in the puerperium than cases not so dealt with. The gonococcus was more frequently found in the apparently clean cases than in the cases which had a greenish purulent discharge, particularly after confinement.

Dr. MARGARET RORKE agreed that the serious cases mostly showed streptococci and staphylococci associated with gonococci. These cases seemed to do well up to a point, beyond which they seemed to progress no further. At actual delivery there was very little trouble, and little or no rise of temperature occurred. She had noticed, however, that though the mother was kept in bed 12 or 14 days, and the child was fed at the breast, the gonococcal cases did not involute as the ordinary uninfected cases did, the uterus remaining large and bulky for weeks afterwards. And many of these cases tended to have retroversion, which aggravated the menorrhagia. The third class of cases to which Sir Henry Simson referred had been found in her hospital to be a tiresome class. There was a large class who during the war became infected with syphilis, had only a moderate amount of treatment, who married subsequently and would be having children. These, not knowing the disease was still present, would not have treatment during pregnancy, and there was likely to be a crop of syphilitic children. She had a great liking for lactic acid in gonorrhœal

cases. She had so far hesitated to use milk injections in pregnancy.

The PRESIDENT said he was glad to hear it advocated that the woman who showed signs of leucorrhœa during pregnancy should be examined culturally and bacteriologically. That advice he would like to see broadcast throughout the country; it would do much to clear up gonorrhœa in a general way and to lessen the incidence of ophthalmia neonatorum. Also, was it not likely to prevent some of the puerperal morbidity? The association of the streptococcus with the gonococcus in puerperal tube trouble was a matter of considerable interest. He supported Dr. Logan's view that women suffering from gonorrhœa who had been treated steadily throughout the period of their pregnancy did extraordinarily well during the puerperium. If this course were more general, a good deal of puerperal mortality would probably be prevented, for that was so often due to streptococci which were able to gain a footing and flourish because the soil had already been prepared for them by the gonococcus. All these facts strongly supported the contention that every woman who was found to be suffering from leucorrhœa should be thoroughly examined. And in that investigation he advanced a strong plea for taking cultures; for very often a slide showed a negative result when cultures gave a positive one. At St. Thomas's Hospital the cervical canal was not touched during pregnancy; the staff there contented themselves with placing pledgets against the cervix, so as to promote the outflow of pure serum. They had a fear of provoking a premature termination of the pregnancy.

The openers briefly replied.

Reviews and Notices of Books.

ENCYCLOPÆDIA MEDICA.

Second edition. Under the General Editorship of the late J. W. BALLANTYNE, M.D., C.M., F.R.C.P.E.; and ALEXANDER GOODALL, M.D., F.R.C.P.E. Vol. XII.: *Tularæmia to Zinc.* Supplement. Edinburgh: W. Green and Son, Ltd. 1925. Pp. 671. 30*s*.

THE second edition of the Encyclopædia Medica is completed with this volume, which contains, besides a number of new and rewritten articles in the substance of the book, a special supplement dealing with the modern treatment of diabetes and an article on respiration by Dr. Whitridge Davies. In the former Dr. C. G. Lambie gives a valuable résumé of the principles governing diabetic dieting under insulin, and a complete diet table which will be of much value to practitioners who have little time to work out calories for individual patients. The article on X rays and radium, by Dr. R. Knox, is illustrated by very beautiful plates.

A large part of the volume is concerned with genito-urinary diseases. Articles on the urachus by Prof. A. W. Shee, on uræmia by Sir Nestor Tirard, on the urethra and venereal diseases by Sir D'Arcy Power, on the urine by Dr. Lambie, on the uterus by Mr. A. E. Giles, Mr. G. S. Davidson, Mr. W. F. T. Haultain, Mr. Comyns Berkeley, Miss Louisa Martindale, and Mrs. Mary Scharlieb, on the vagina by Prof. T. Wilson, and on the vulva by Mr. Giles are included. Of the infectious diseases typhoid, typhus, undulant fever, varicella and whooping-cough, yaws and yellow fever are considered, together with articles on vaccination and vaccine therapy. Public health matters are represented by articles on water and vital statistics. The account of visceral pain by the late Sir James Mackenzie will fulfil the expectations of his disciples. A new short account of vitamins has been provided by Dr. Marshall Findlay. An excellent account of urticaria by Dr. J. M. Macleod is a new feature in this edition, as is also the article on unconsciousness by Dr. T. Hyslop.

The concluding volumes of this work have not been allowed to suffer through the death of the editor chiefly responsible for the earlier ones, and it can be recommended as a balanced encyclopædia of the medical knowledge of our times.

ANÆSTHESIA.

Second edition. By J. T. GWATHMEY, M.D. London: J. and A. Churchill. 1925. With 273 illustrations. Pp. 799. 25*s*.

Dr. Gwathmey's book is well known on this side of the Atlantic. The present edition is continued on the lines of the first, but with certain important omissions which, in our opinion, greatly improve the volume. The original book was not easy to read, partly, no doubt, because of that lack of continuity which is inevitable where many collaborators take part instead of a single author, but partly, also, because it was overloaded with statistics, a feature nowhere less satisfactory than in a work on anæsthetics. The statistical chapter is omitted entirely in this edition. There is less justification for removing the chapter on mental influence and hypnosis, for these processes have much theoretical as well as some practical value. Important new matter has been added. Synergistic analgesia and anæsthesia, with special reference to magnesium sulphate, receive a chapter to themselves, as is natural with a branch of work for which Gwathmey has been mainly responsible. By synergism the author denotes the reciprocal augmentation of the action of one drug by that of another. He contends that the effect of the synergistic action of drugs is not due to a simple summation of similar pharmacological actions, but we confess to finding no proof of this assertion; indeed, it appears to be a proposition highly difficult to demonstrate. When a condition of analgesia or of anæsthesia is produced by the combined action of two or more drugs, each of which can alone produce the condition to some extent, how are we to know to what exact extent each drug is responsible in the state finally obtained by their combined action? With regard to magnesium sulphate, it is interesting to read that subarachnoid injection produces in animals nearly immediate anæsthesia and paralysis of the extremities.

Details are given of laboratory experiments in a chapter which contains one observation which will puzzle many readers: "The fact, well known to anæsthetists, that nitrous oxide, the least harmful of the general anæsthetics in its effects upon the tissues and organs of the body, is dangerous when used alone." It is generally held, we believe, that apart from asphyxia nitrous oxide alone is free from danger. The technique of synergistic anæsthesia is elaborate and involves so many hypodermic and rectal injections that its advantages should be very great to justify the amount of manipulation to which the patient is subjected. However, Rector, after his experience of 2000 cases, is well satisfied with the method. Meltzer found that the heart remains normal during anæsthesia from magnesium sulphate, and that the danger of this agent is its effect on respiration. In synergistic anæsthesia it is used in 4 per cent. solution, some 200 to 400 c.cm. being instilled by hypodermoclysis. A fatal case is quoted from Curtis after 310 c.cm. of a 4 per cent. solution, but Gwathmey disagrees with Curtis as to the cause of the death, because the post-mortem examination revealed profound changes in the liver, and these do not occur in laboratory animals even when magnesium sulphate is given in sufficient volume to kill.

The general physiology of anæsthesia is fully discussed in a chapter of over 60 pages, and special chapters by collaborators are on local anæsthesia as applied in dentistry, on the use of rebreathing (W. B. Gatch), on intravenous anæsthesia, and on ethylene anæsthesia. With regard to the latter drug A. P. Luckhardt states that it is the anæsthetic of choice for elderly subjects undergoing

urological operations, and also for diabetics. Over 1100 cases without fatality are reported. Oozing from the wound and the explosibility of the gas are given as the two chief drawbacks to ethylene.

This edition should prove popular to readers in this country as well as in the United States.

MIDDLE AGE AND OLD AGE.

By LEONARD WILLIAMS, M.D. London: Humphrey Milford. Oxford University Press. 1925. Pp. 296. 10*s.* 6*d.*

IT is in the very nature of technology, no matter in what science or art, that it should itself be dull. This must be so, and the sensible writer will not try to offend the natural order of things by forcing a breeziness of style into his technical description that has no right to be there, but will be as brief and accurate as possible and keep his humanity for the application of his hard-won knowledge to the problems of human life. For his general observance of this working rule Dr. Leonard Williams deserves praise. His book is not technical as medical works go, but a considerable amount of technique has been skilfully inserted into his essay, never too much at a time; when, however, he is for the moment released from it his style becomes delightful.

It is unnecessary to remind our readers that Dr. Williams is first and foremost a dietitian; he is, secondly, a bold and humorous lover of controversy; and, thirdly, from his years of experience as medical adviser to a large life insurance company, he has learnt a great deal about the pathology of old age. These three qualifications make him peculiarly fitted to write on such a subject as middle age and old age. He explains in his preface that, since the subject of old age is inseparable from the condition of middle age that introduces it, and since a complete survey of these two states would amount to an exhaustive study of medical practice, his book is a compromise, its object being to show the best way to a happy old age and the most useful weapons against the diseases that beset middle age. In the second half of his aim he has attained a considerable measure of success. He has discussed clearly and well every one of the common ailments that cause so much suffering to those who have passed their prime, and he has drawn on the latest result of research, notably in the treatment of diabetes, carcinoma, and chronic intestinal stasis, in order to arm the practitioner with the means of helping his patient over this exacting period.

Whether he has been successful in his first aim is a matter open to question. Dr. Williams sees chronic intestinal stasis as the supreme enemy of the aged and the first cause of every one of the troubles incident to that stage of life. The stasis is, he argues, directly due to the action of toxins, which are present in intolerable force owing to excessive and unsuitable feeding during the whole period of active life. They fortify their attack by causing kinking and distortion of the colon, and they work the endocrine system to an early retirement, thus completing the vicious circle. Therefore, if we would live long, our bill of fare must be drastically revised, both for quantity and quality. Dr. Williams attacks our four meals a day so effectually that scarce one survives. We may have a continental breakfast, with honey if we are good; a bread-and-cheese lunch, with the concession of some harmless egg dish, if we must; he will not hear of afternoon tea, that real and never-failing comfort of the elderly, and even dinner is not spared from this ruthless savagery; our butcher's meat is replaced by expensive fish or game, and our beloved puddings are gone, never to be restored. We may have fruit salad, but no sugar with it, for cane sugar is a disaccharide and quite indigestible. A cheese savoury or something equally harmless is allowed to round off the meal, but we ask in vain for our cup of coffee. We may have alcohol in the strictest moderation at this meal alone. His salads, while distinctly attractive as a supplement to our ordinary meals, horrify us as substitutes, and his three-day fasts and venesection (his advocacy of which is affectionate almost to gloating point) bring home to us the inner truth of the saying, "Those whom the gods love die young."

We cannot dispute the accuracy of a single one of Dr. Williams's statements, yet we doubt whether old age at such a price is worth having. But the real value of the book is unquestioned, if only for its admirable chapters on the endocrinology of middle age and the climacteric in women.

CANCER PROPAGANDA.

Cancer and the Public. By CHARLES P. CHILDE, B.A., F.R.C.S., M.R.C.P.E., Consulting Surgeon, Royal Portsmouth Hospital. London: Methuen and Co., Ltd. 1925. Pp. 267. 10*s.* 6*d.*

IN this book, which is dedicated to the public, the author has presented those practical aspects of the cancer problem which are of special interest to the public in such a way that they can be understood by every intelligent reader. He emphasises in particular that cancer is a curable disease if treated surgically in its earliest stages. He points out that cancer has no characteristic symptoms and that therefore the disease, especially in its earliest stages, cannot be diagnosed with certainty except by microscopic examination after operation. He indicates the various "danger signals" that may make us suspicious of the presence of cancer, and urges the public not to delay in asking for medical advice if any of these symptoms are noticed. He disposes of the various fallacies and errors which have come to be associated with cancer in the public mind, such as the relation of cancer to diet, and he concludes that cancer is not infective and that cancer-houses are a myth. He also discusses the limitations of radio-therapy.

The book is written in such a lucid and sane manner that it could be recommended without reserve were it not that in the concluding chapter Mr. Childe raises a highly controversial subject in pleading for establishing a cancer propaganda based on the model of the American Society for the Control of Cancer. This question was discussed a year or two ago at the Royal Society of Medicine without meeting with general approval. This is not the place to discuss the objections to such a propaganda: it must be sufficient to say that they are based on more substantial grounds than indifference and lack of initiative on the part of the medical profession, as the author suggests. It is unfortunate that a book of 260 pages of large print without expensive figures or tables, which is intended for the instruction of the public, should be published at such a high price as half a guinea.

The Conquest of Cancer. By H. W. S. WRIGHT, M.S., F.R.C.S. With an Introduction by F. G. CROOKSHANK, M.D., F.R.C.P. London: Kegan Paul, Trench, Trübner and Co.; New York: E. P. Dutton and Co. 1925. Pp. 86. 12*s.* 6*d.*

THE lesson which Mr. Wright emphasises throughout this convincing little book is the good prospect of cure by surgical means of a patient suffering from cancer at an early stage. It is indeed to those patients who are not consciously suffering anything but the inconvenience of a persistent pimple or the irritation of a small ulcer, and to their friends, that his propaganda is chiefly addressed. There is a breezy optimism throughout the volume which adds considerably to its value for lay reading, but hardly ever is the author led by his enthusiasm to protest or to promise too much. The importance of chronic irritation as a factor in the ætiology of cancer is now generally admitted; the author regards as equally important "the presence of an acid environment" (p. 54), but does not explain the grounds on which he bases this impression. The use of the term pre-cancerous stage is not well-advised, since until malignant cells are actually visible in a microscopic

section of a tumour or ulcer it is not possible as yet to recognise any lesion which will assuredly give rise to them. In discussing X ray and radium therapy, other than palliative, Mr. Wright points out that no figures are of any value till seven years at least have elapsed after treatment. The dictum as to a seven years basis for reported cures should be noted by surgeons, who are too apt to regard three years as a sufficient margin. Most of the highest authorities on radio-therapy are, however, agreed that in operable cases surgery should be the first resort.

It is no easy task "to enlighten the laymen, that their help may be enlisted, and yet to avoid alike exaggeration and smooth sayings, false hopes, and false fears" on such a controversial subject as the conquest of cancer. Dr. F. G. Crookshank introduces Mr. Wright to the public as one who has performed this task fairly and lucidly, and we agree with the verdict.

New Cancer Facts. By DAVID MASTERS. With an Introduction by Sir JAMES CANTLIE, K.B.E., F.R.C.S. London: John Lane, The Bodley Head. 1925. Pp. 84. 2*s.* 6*d.*

Mr. Masters, who has been successful in fascinating a large number of readers with the romance of excavation and the wonders of salvage, has more recently attempted to present in equally attractive form steps in the conquest of disease. His latest book, under a title somewhat too precise, is largely devoted to special pleading on behalf of the parasitic theory of cancer, of which he is a spirited if not very judicial advocate. Indeed, his enthusiasm would seem to have been aroused less by the theory in abstract than by the personality of Dr. Louis Sambon. It is with the conclusions of this observer, from work in Italy and Iceland, that the book is largely concerned; attempts by Dr. James Young and by Dr. Glover to demonstrate the causal parasite are held still to be unproven. Brief mention is made of the filter-passers wherefrom Peyton Rous was able in 1911 to produce sarcomata in chickens. The recent repetition and extension of this important work by Dr. W. E. Gye in this country, reported in last week's LANCET, may well lead to a reconsideration of the parasitic theory of cancer from an entirely new aspect. It may be long, however, before such definite conclusions are reached as can be set out with profit in a small handbook designed for the layman. The problem is unfortunately less simple than it appears to Mr. Masters.

LECTURES ON PATHOLOGY.

By LUDWIG ASCHOFF, M.D., Professor of Pathologic Anatomy, University of Freiburg. New York: Paul B. Hoeber. 1924. Pp. 365. $5.

THESE lectures were delivered by Prof. Aschoff in America during the spring of 1924. They are 14 in number and deal with a variety of subjects, including the pathology of gall-stones, the pathological metabolism of fat, the goitre problem, the pathology of gastric ulcer, the parthogenesis of human pulmonary consumption, and the reticulo-endothelial system. Prof. Aschoff is one of the greatest living authorities on morbid anatomy, and has particular claims to speak on the subjects he has chosen. The publication of these lectures in book form will, therefore, be welcomed by all pathologists. Freed from the dogmatism which the writer of a student's text-book must maintain, Prof. Aschoff is able to deal with his matter with breadth of view and a wealth of detail which would be out of place in a more elementary publication. Above all, he is able to give his individual opinion full rein, and to indulge in a valuable personal contribution to pathological teaching.

In reading these lectures one cannot fail to be struck by the enthusiasm which has done so much to make Germany the home of morbid anatomy. The author's interest never flags; even during the war he continued to be a student of academic pathology, utilising the facilities afforded by his position as army prosector to make observations which could scarcely have been possible in normal times. The lectures have been rendered by anonymous translators to whom the author gives thanks in his preface, and the occurrence of an occasional phrase like "a comprehensive understanding of this clinically so important disease" bears witness to the fidelity of the translation.

JOURNALS.

QUARTERLY JOURNAL OF MICROSCOPICAL SCIENCE. Vol. LXIX. Parts I. and II.—The two latest numbers contain 15 memoirs on a large variety of subjects by authors nearly all of whom are recent workers in zoology. The exception is an article by Dr. Arthur Bolles Lee, a well-known authority on microscopical technique, who writes upon the chromosomes of *Paris quadrifolia*.—A paper on the development of the skull of the sole and the plaice, with good figures of the young and symmetrical skull, is from the zoological laboratory of the University of Bristol, by Dr. N. J. Berrill.—A short and clearly illustrated account is given by Mr. E. Percival (University of Sheffield) of a new British land planarian, *Rhynchodemus britannicus*, of which a specimen was lent to the author by Dr. Dendy, whose recent death is a great loss to zoology. This animal is one of three species known to be indigenous to this country; one other, introduced from the tropics, is fairly common.—Mr. N. A. Macintosh describes the crystalline style of *Crepidula fornicata* and comments upon this structure in other gastropods, comparing them with the much better known and more generally occurring crystalline style of lamellibranch molluscs. All the contents are of interest.

QUARTERLY JOURNAL OF MEDICINE.—The April number contains the following articles: The Blood-urea and its Estimation in Diabetes Mellitus, by Charles E. Brunton. Observations on the blood-urea and blood-sugar concentration in cases of diabetes treated with or without insulin did not reveal any relationship existing between them. The administration of insulin did not appear to affect the blood-urea content. It was found that diabetic coma is not necessarily accompanied by a high blood-urea figure, and the amount of urea in the blood does not always increase with the duration of the diabetes.—Lymphoblastic Erythrodermia, by James H. Sequeira and Philip N. Panton. An account is given of five cases of a peculiar skin affection characterised by erythrodermia and a specific change in the blood. The blood picture usually shows a secondary anæmia, which may be severe, but the characteristic alteration consists in a relative and absolute increase of the lymphocytes. The authors would for the present place the cases in a special category distinguished on the one hand from other states of erythrodermia, and on the other from leukæmia. The appearances of the skin are shown in two coloured plates.—Changes in the Blood in Anæsthesia, by Dorothy G. E. Potter. It was noted that a fall in the alkaline reserve occurs during the first few minutes of the administration of chloroform and ether anæsthesia. A rise in blood phosphate is also frequently seen, which may be due to the passage of a hexose phosphoric acid compound from the muscles to the blood. It is suggested that the phosphate is mobilised and stored in the liver to assist in the excretion of acid by the kidneys.—The Tolerance of the Body for Urea in Health and Disease, by H. E. Archer and G. D. Robb. The authors describe an interesting series of observations upon the tolerance of the body for urea, which is analogous in some respects to the glucose-tolerance test. The resting blood-urea is first estimated, and observations are made at intervals after drinking

15 g. of urea in water, as in the urea-concentration test. In normal individuals there occurs a rise of 5 to 15 mg. urea per 100 c.cm. blood in 30 to 60 minutes, and the fall to normal is complete in 120 minutes. In renal disease, if the blood-urea is raised and the concentration is also poor, a tolerance test is not required to demonstrate renal inefficiency. In doubtful cases the resting blood-urea is often normal, and the urea-concentration test shows no deficiency. In such instances the urea-tolerance test was found of value, as deficient tolerance was indicated by an excessive rise of over 15 mg., and recovery was not complete in four hours. It is possible that the urea-tolerance test will only show deficiency in the azotæmic type of nephritis.—Calcium and Magnesium in Some Pathological Sera, by Elsie Watchorn. A series of estimations are recorded of the serum calcium and magnesium content. No definite relationship was found to exist between the variations of the two substances in certain diseased states. The calcium content was increased in some and the magnesium in nearly all of the pathological conditions investigated. —The Relationship of Infection to Diabetic Coma, by George Graham. Since the introduction of insulin patients in diabetic coma usually recover consciousness if treated suitably, but despite this death often occurs in a few days. A series of seven cases of diabetic coma are described, in all of which an infection was present. In five of them coma developed before there were any signs of the infection, which, however, became manifest during the insulin administration. It is recognised that insulin is much less effective in lowering the blood-sugar in the presence of an infection, and the possible hypotheses to explain this phenomenon are discussed.—The Spinal Fluid in Encephalitis, by James L. Halliday. Estimations made upon cases of epidemic encephalitis showed a normal fasting blood and spinal fluid sugar content. The spinal fluid sugar was found to rise after a meal, and disregard of the time relationship between the ingestion of food and the examination of the fluid may account for the high sugar content found by many workers on encephalitis and other conditions. In three cases of encephalitis samples of fluid were removed at half-hourly intervals after the administration of 50 g. of glucose. A delayed spinal fluid curve was noted in association with the blood-sugar curve.—Pituitary Obesity in Adolescence, by H. Gardiner-Hill, I. Jones, and J. Forrest Smith. A series of 60 cases is described in which the onset of adolescent obesity was associated with a period of accelerated growth. The various clinical and laboratory methods for the detection of pituitary lesions were carried out, and it was concluded that an early stage of hyperpituitarism finally passes into one of hypopituitarism. Two plates are included, illustrating certain clinical and X ray appearances.—Carbohydrate Tolerance in Myxœdema, by H. Gardiner-Hill, P. C. Brett, and J. Forrest Smith. The sugar tolerance was determined in 15 cases of myxœdema. The fasting level was usually within normal limits, but the blood-sugar curve was higher and more prolonged than in normal persons. As glycosuria rarely occurred, it is suggested that the renal threshold is raised. The general effect of treatment by thyroid extract is to lower and quicken the blood-sugar curve.

PROTOZOOLOGY is the title of a new journal published by the Institute of Agricultural Parasitology of the London School of Hygiene and Tropical Medicine, and is intended to provide a medium for the publication of new work on matters protozoological done at the Institute. The first number, which has just appeared, contains an article by Dr. J. G. Thomson on a species of giardia found parasitic in a helminth parasite of a rodent; an account by Miss M. Triffitt of a sporozoan parasite of sheep in Britain; and a description by the same author of several species of coccidia found in reptiles which have died in the Zoological Gardens. The new periodical will be issued as a supplement to the *Journal of Helminthology*.

PROCEEDINGS OF THE ROYAL COMMISSION ON NATIONAL HEALTH INSURANCE.*

EVIDENCE OF THE BRITISH MEDICAL ASSOCIATION

(*continued from p. 1186*).

Treatment by Assistants.

(Q. 14736–40.) The number of practices in which assistants are employed is small and the Association has no evidence of insured persons being turned over by the principal to his assistant. Dr. Dain said:—

(Q. 14738.) In the practices with which I am familiar where assistants are employed, the head of the firm and the assistant work equally together. They take consulting hours at the same time and the patient probably goes into the same waiting-room and can choose which doctor she will. It is possible that she may have three doctors working all simultaneously and she goes to see which she likes. She may have the choice of three doctors, being on the panel, although only one of the doctors in such a case might be a panel practitioner.

In one large insurance practice the majority of the patients preferred to see the assistant.

Records.

(Q. 14756–9.) Dr. Brackenbury pointed out that their evidence with regard to the possible uses of the clinical records was to the effect that they might be made of great service in relation to medical research and public health. He agreed, in reply to Sir Humphry Rolleston, that it was difficult to express a considered opinion of the value of these record cards introduced so recently as 1921, but there was a feeling that more use might have been made of them, especially in relation to the public health, and that insurance practitioners generally would like to feel that more was done in this direction.

Hospital Patients.

(Q. 14794.) Dr. Brackenbury refuted the suggestion that panel patients were referred to hospitals as soon as they became troublesome. There was a good deal of misunderstanding in this matter. Patients were frequently referred to hospitals when requiring specialist treatment, and also when their home conditions did not permit of proper nursing. The hospitals had been asked by the British Medical Association to send back to the insurance practitioner cases that fell within his province, and could be equally well treated by him at home as in the hospital, and the hospitals very largely do this.

Dr. Bolam said that it was a general practice now on the part of the larger hospitals to insist that all work which is properly the work of an insurance or general practitioner should not be continuously sent to a hospital.

* In previous articles the proceedings of the Commission were reported under the following headings: Introductory Note; The Scope of the Insurance Scheme (see THE LANCET, Jan. 31st, pp. 247–8); The Provision of Medical Benefit (Feb. 7th, pp. 301–3; Feb. 14th, pp. 355–6; Feb. 21st, pp. 403–5); Financial Provisions of the Act (Feb. 28th, pp. 454–7); Medical Certification and the Regional Medical Staff (March 7th, pp. 508–9); The Approved Societies and the Money Benefits (March 14th, pp. 564–5; March 21st, pp. 623–4); Evidence of the Hearts of Oak Society (March 28th, pp. 677–9); Evidence of the National Conference of Industrial Assurance Approved Societies and of the Manchester Unity Approved Society (April 4th, pp. 731–3); Evidence of Independent Order of Rechabites, of Rational Association Friendly Society, and of Miners' Societies (April 11th, pp. 784–6; April 18th, p. 839); Evidence of Mr. Alban Gordon (April 18th, pp. 839–40); Evidence of Joint Committee of Approved Societies, of Stock Exchange and Lloyds' Health Insurance Societies, and of Group of Catholic Approved Societies (April 25th, pp. 889–91); Evidence of the National Insurance Beneficent Society (May 2nd, pp. 943–4); Evidence of the British Medical Association (May 9th, pp. 993–5); Evidence of the British Dental Association and other Dental Organisations (May 16th, pp. 1044–6); Evidence of the Insurance Committees (May 23rd, pp. 1097–8); Evidence of Various Approved Societies (May 30th, pp. 1135–6); Evidence of the British Medical Association (June 6th, pp. 1184–6).

References to the paragraphs in the printed statements issued as appendices to the reports of the oral evidence are given thus: "App. X. 69," and references to the oral evidence thus—Q. 1369.

An Income Limit for all Insured Persons.

(Q. 14843–14971.) The Association's proposals include a suggestion that many persons not at present entitled to medical benefit should be brought within the scheme—e.g., dependants of insured persons below a certain income limit and persons at present receiving medical attention under the Poor-law, and that others at present insured should be excluded by the application of an income limit to all workers, manual and otherwise. To facilitate discussion the witnesses indicated £2 10*s.* a week—£130 a year—as a suitable limit of income below which the dependants of the insured persons might be treated, but they did not in the least wish to be regarded as tied to this figure. The reply to the suggestion that the doctors were really not concerned with the income limit was that the doctors (Q. 14864) have accepted the National Health Insurance scheme, which is so much opposed to their traditions and ways of practice, in order to meet an acknowledged want, and they did not want to see it unduly extended. Dr. Cox said :—

(Q. 14869.) I think the average doctor would say that the ideal form of medical practice is where the patient can go to the doctor of his choice with his own money in his pocket, and pay for it, the transaction being just between the two . . . . But we know there are people who cannot do it, and you have to provide for them. We do not want, however, to provide for any more of them under a system where the State comes in than we can possibly help.

It was agreed that in regard to manual workers, so many of whom would be in and out of benefit, an income limit would be very difficult to apply, but Dr. Brackenbury suggested that these difficulties should not be insuperable.

It appeared to emerge from the questions on the subject that the title of a person in insurance could only be settled on a record of his past earnings, with the unfortunate result that he would be insured and receiving medical benefit when his income was high and out of benefit when his income was low.

Extension and Coördination of Medical Services.

(Q. 14972–999.) It was the view of the profession that while the numbers of insured persons should be suitably restricted, the provision itself should be as far as possible complete, and that the extended service should be coördinated with the existing public services.

(Q. 14974.) It would not be mere coördination and bringing under one local administration, but it would mean the practical abolition of some of these services by their absorption in the National Health Insurance scheme. We envisage, for instance, the Poor-law medical service and nearly, if not all, treatment centres—I use the word advisedly—as being no longer necessary if the alternative provision under the scheme were made for the people in that other way. So that it would not be a continued existence in their present form, coördinated, of these services; some of these things would be largely, if not entirely, unnecessary.

With regard to the finance of the extended scheme, Dr. Brackenbury said they claimed that the total national cost would not be much greater than at present.

(Q. 14976.) We are of opinion that if you take the income of all these different services there would be sufficient income in total to satisfy the whole scheme, except, perhaps, for the bringing in of the new body of dependants. Even the extra cost of bringing in the new body of dependants would have to be discounted in so far as you could thereby abolish the need of treatment clinics under the school or other authorities for those dependants. The total income of money spent upon the public health would be almost, if not quite, enough, I think—as most of us think—to finance such a scheme as we have in mind.

(Q. 14997.) If financial conditions required that a development should proceed by stages, the opinion of a majority of the profession was that extension of the scope of the service should take priority over the inclusion of dependants.

Consultant and Specialist Services.

(Q. 15000–15010.) Dr. Brackenbury emphasised the professional objections to the administration of treatment benefits in any form by approved societies. He also indicated that the various additional services suggested should, with certain exceptions, be available only on the recommendation of the general practitioner, these exceptions being the prescribing of drugs and appliances and extra services by the consultant; and dental treatment.

In the case of dental treatment, an insured person should be able to go direct to the dentist in an emergency. Dental and ophthalmic treatment are merely individual forms of specialist and consultant treatment. As regards all specialist and consultant treatment, the witnesses had no doubt about the necessary supply of doctors being available.

In regard to tuberculosis and venereal disease it was recognised that for some time to come a salaried service was inevitable, but with the progress of medical education the time would relatively soon come when the general practitioner would be able to undertake the medical treatment of these cases with the consultant's services at his disposal in time of difficulty.

Maternity Work.

(Q. 15011–55.) With regard to the proposed inclusion of a scheme for maternity services within the insurance doctor's contract, the question was raised as to how far the increase in maternity fees now charged by doctors was attributable to the increase in the cash benefit to the insured person. The witnesses said that the increase in the fees had no reference at all to this fact, that it was common to insured and private practice alike, and that it was attributable to a variety of causes, not the least important of which was the increasing tendency to call in the doctor's services in difficult cases only.

In the extended service which was proposed, it was made clear that individual doctors should be allowed to exercise the option not to undertake maternity work, which was often that part of a doctor's practice which he would like to give up first, as it involved so great a tie.

(Q. 15088.) Dr. Dain pointed out that in the scheme which they had put in evidence they were offering the insured woman not a choice of the doctors on the panel, but any doctor willing to undertake maternity cases, non-panel as well as panel doctors. Dr. Brackenbury said :—

We are prepared to guarantee . . . that in every case there shall be a maternity service of doctors in the same way as there is a medical service. I think if the situation was put to the doctors there would be no need for compulsion. They would arrange amongst themselves that there should be such a service for insured persons. I do not doubt it for a moment. I should not mind any legislative power being given to see that there was such a service.

Prescribed Appliances.

(Q. 15061.) The supply of appliances for insured persons was unduly restricted, and this tended to some extent to hamper the doctor in his insurance work. All the appliances that can be described as necessities should be available to the insured person under the doctor's prescription out of the Insurance Fund.

With regard to trusses particularly and elastic stockings we should regard those as necessities rather than luxuries for the treatment of the patient. We think they ought to be available. It hampers us not to be able to secure them without considerable work and trouble.

Approved Societies' Surpluses.

(Q. 15092–15117.) It was the view of the Association that all treatment benefits should be removed from the control of societies. With regard to the contention that the funds available for these benefits belonged to certain societies, Dr. Brackenbury said that the huge accumulations which were now becoming evident could not have been anticipated by Parliament, and that in so far as they could be attributed to the segregation of good lives into particular societies, this hardly came under the head of good administration giving the societies any real claim to the funds.

Ophthalmic Treatment.

(Q. 15145–55.) Mr. Bishop Harman said that it was important that ophthalmic treatment should include proper medical diagnosis.

The eyes are the one place where you can look into a man's body and see his nerves and blood-vessels and tissues just as though you put your head through the window and looked at this Royal Commission. . . . There are more diagnoses of serious conditions made by the ophthalmic examiner than perhaps by any other specialist.

Dr. Bolam added:—

I have had three instances come to my own knowledge within the last month where spectacles have been supplied by opticians in good faith, the patient going in good faith to the optician. A visit to an ophthalmic surgeon in one case led the surgeon to infer from the eye condition that the patient was suffering from diabetes, and this was found to be the case; in a second, the patient was found to be suffering from Bright's disease; and in the third the condition was found to be due to syphilitic disease of the eye. That is just within one man's experience.

Payment by Attendance.

(Q. 15157–15212.) Dr. Stanley Hodgson explained the system of payment in force in Manchester and Salford. The amount available for the area as a whole is the same as under the capitation system of payment, but the doctors are paid by reference to the number of attendances, visits, and special services instead of according to the number of persons on their lists. The bills of doctors who have made apparently an excessive number of attendances are scaled down by reference to the general average, and the bills as a whole have then to be scaled down within the limits of the total sum of money available. He did not think there was much in the suggestion that under the attendance system the insured person felt less compunction in making visits to the doctor, as he doubted whether insured persons were sufficiently aware of the facts.

(To be continued.)

Reports and Analytical Records.

GAYMER'S CIDERS.

(MANUFACTURED BY MESSRS. WM. GAYMER AND SON, LTD., ATTLEBOROUGH, NORFOLK. LONDON OFFICES AND STORES, 521–529, HACKNEY-ROAD, E. 2.)

THE undermentioned ciders have been sent to us for examination:—

1. *Sparkling Pommetta.*—A cider of a dry variety produced in the champagne style and made from a special blending of apples in order to obtain a particular character and bouquet.

2, 3. *O.N.S. and N.*—Two dry ciders.

4. *V.D.*—A dry cider; although not quite so dry as samples 2 and 3. This cider is claimed to possess a special character and bouquet of its own.

5. *Two Star.*—This cider is similar in quality to the V.D. brand, but is slightly sweeter.

6. *Diamond.*—A sweet cider.

When these different brands were analysed the following results were obtained:—

Number.	Specific gravity before fermentation.	Present specific gravity.	Total solids, per cent.	Alcohol, per cent. by volume.	Invert sugar, per cent.	Acetic acid, per cent.	Malic acid, per cent.	Flavour.
1	1061·9	1018·7	6·87	5·55	4·52	0·07	0·78	Full flavour, good palate; not very sweet.
2	1058·6	1016·7	6·31	5·4	4·26	0·02	0·64	Full palate, rather dry.
3	1051·6	1018·5	6·35	4·25	4·53	0·07	0·67	Very dry, fine palate.
4	1055·7	1020·6	7·0	4·55	4·82	0·05	0·64	Fairly dry, good flavour.
5	1052·9	1025·6	7·9	3·55	6·16	0·10	0·56	Good palate, sweeter than No. 4.
6	1051·0	1030·2	8·86	2·57	7·64	0·04	0·45	Full sweet flavour.

Preservatives: Benzoates, salicylates, and naphthol were absent in each specimen examined.

These ciders, judged from their bouquet, flavour, brilliancy, good condition, and analyses, are very satisfactory; moreover they are well and carefully bottled and attractively labelled. All are of a good gravity and obviously quite free from any impurity. Samples 2, 3, and 4 are recommended as a beverage to those who suffer from gout, rheumatism, and kindred disorders.

LIPOIODINE CIBA.

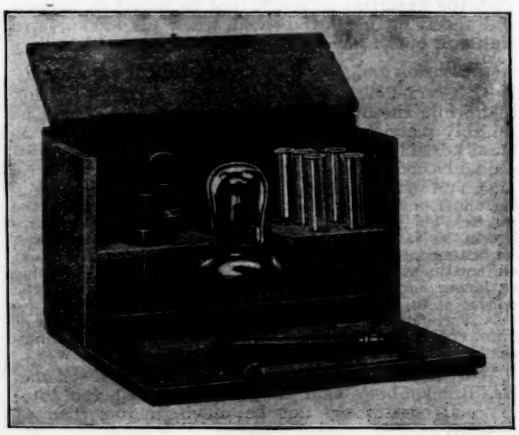
(CLAYTON ANILINE COMPANY, LIMITED, 68½, UPPER THAMES-STREET, E.C.4.)

This is a preparation which has been widely recommended as a pleasant method of administering iodine without producing symptoms of iodism. The drug is the ethyl ester of di-iodobrassidic acid, containing over 40 per cent. of iodine, and its pharmacological properties are those indicated by its composition, while the drawbacks to the administration of the alkaline iodides are avoided. And all can look back on the disagreeable results of the wrong exhibition of potassium iodide. Medical testimony from sound sources speaks of the stability of lipoiodine "Ciba" and of the slowness of absorption and elimination which allows of prolonged and well-watched treatment. The specimen sent to us for examination is a small case of 20 tablets each containing 5 gr., and a tablet can be taken three times daily, but, as the proprietors are careful to say, only in accordance with the directions of a physician.

New Inventions.

A PATIENT'S URINE-TESTING OUTFIT.

I HAVE designed the little outfit herewith illustrated for the use of diabetic patients who are on dietetic or insulin treatment. Everyone recognises the



advantages of patients examining their own urine regularly. The result of any indiscretion is at once apparent and they are much more likely to adhere to the prescribed diet. It also enables intelligent patients to regulate their dosage of insulin. The outfit consists of Fehling's solution No. 1 and No. 2, liq. ferri perchlor. dil., a spirit lamp, half a dozen test-tubes, a notebook to record daily results, while full directions for the test are printed on the lid. The whole is enclosed in a neat wooden case. I recommend Fehling's instead of Benedict's test as all medical men are familiar with the former and can better assist the patient if he gets into difficulties. I think it is essential that patients should test occasionally for diacetic acid and should be instructed to get medical advice at once if any red coloration is shown with the ferri perchlor.

The outfit has been made by Messrs. Allen and Hanburys, Ltd., 48, Wigmore-street, W. 1.

Swansea. A. CLARKE BEGG.

THE LANCET.

LONDON: SATURDAY, JUNE 13, 1925.

THE ADVANCE OF THE GENERAL PRACTITIONER.

THE visit of the Inter-State Post-Graduate Assembly of America to London, which concluded last week, was in effect a movement on the part of a group of Canadian and American general practitioners to equip themselves to the utmost for their work in general practice. Time after time in lectures and addresses given during the visit—as will be seen in our reports of the proceedings—reference was made to the function of the practitioner of medicine in the community. At the Guildhall banquet Dr. CHARLES MAYO, who presided, said, in so many words, that where the general practitioner does his duty the reputation of medicine will stand high in that community; and our American visitors themselves showed an almost amazing addiction to duty in attending during a period of peerless weather morning lectures and afternoon demonstrations of various kinds; but it was revealed amusingly at the banquet that the congressists had gone into training in preparation for the visit, for 65 medical addresses were delivered on the boat on which most of them came over. Dr. MAYO went on to speak of the great need for graduate schools of medicine, and coming from one of a team of brothers who have built up a school of teaching whose influence has irradiated widely from its centre of origin, his words carry great weight. He spoke appreciatively of the facilities offered to American delegates during the present visit, but delivered his real message in the advocacy of founding in London a graduate school of medicine which should draw students from all quarters of the English-speaking world. To his mind such a school should be run by men of distinction and achievement who, after laying down their hospital appointments, preferred to devote their advancing years to teaching others rather than to rust out in rural comfort—Dr. MAYO and his colleagues evidently all share the conviction that prolongation of mental activity also prolongs physical life.

Such a scheme has been advanced by Mr. PHILIP FRANKLIN, whom Dr. MAYO described as one of the best organisers in medicine, and should it be found feasible medicine might be enabled to play a larger rôle in the life of the community. Mr. NEVILLE CHAMBERLAIN, the Minister of Health, with no deliberate intention of supporting any particular movement, showed himself in favour of such a scheme. For he reverted constantly to the function of the general practitioner as the educator of the community in health, and first and foremost in the principles of preventive medicine; but while medicine has for long envisaged this as an ideal, the difficulties, if not insurmountable, are still to be surmounted. It is true that in the region of public health administration the application by enlightened authorities of powers already existing would do away largely with the need for new legislation, and equally true that application of the results of modern scientific discovery, if they could be applied, would at once raise the level of practice to an incredible extent. But the latent period is lengthy and is being reduced too slowly. Laboratory research takes long enough to reach the popular text-book of physiology or medicine, and still longer to get into the hands of the practitioner, who then has to assimilate the teaching, and, may be, to translate the findings into a form which can be appreciated by his public. And where hygienic knowledge is present, the will to apply that knowledge may be dormant or even completely absent. The visit of several hundred keen and thoughtful general practitioners of both sexes to this country, using the English language as the common bond with us and between themselves, will have its repercussion in stimulating the scientific practice of medicine in this country. We on this side are less able to cut free from the daily round, or to find the necessary money to make the medical tours which our American colleagues can accomplish; but certainly, as a result of this entente, more of us will find time and means to cross the Atlantic in search of wisdom on the other side. In the meantime, the great need for graduate schools at home is becoming too apparent.

FERTILITY OF THE POPULATION OF ENGLAND AND WALES IN 1921.

THE volume just issued by the Census authorities[1] tabulates the answers to two questions of the Census Schedule of 1921 which were novelties. One question required a statement in respect of each person under 15 enumerated on the schedule as to whether either of his or her parents were alive or dead. The other question invited all married men, widowers, and widows to return the total numbers and several ages of their children and step-children alive and under the age of 16 at the date of the Census, whether such children were enumerated with their parents or not. The primary object of these questions was economic—viz., to obtain data for estimates of the cost of State liabilities such as pensions, invalidity allowances, workmen's compensation, &c., but the results throw some light upon other sociological phenomena. The second of the questions mentioned is particularly interesting, and the way in which it was answered adds another to the many previous illustrations of the essentially limited scope of useful census-taking. In a large proportion of cases the question was not answered. Of 7,475,051 married men, 1,030,661 did not state the number of children. Many of the failures to answer the question really meant that the recorder had "no living children under 16," but an absolutely large number of omissions to give positive information certainly remains. The number of children under 16 obtained by answers to this question was about 8 per cent. less than the total enumerated. The actual error in defect is not, of course, so vast as this difference suggests. The question did not cover illegitimate children of unmarried persons, the children of married men abroad at the time of the Census, or orphans with both parents dead. In this way probably a difference of as much as 5 per cent. might arise, so that the actual deficit is likely to be not more than 3 per cent.

The fact remains, however, that a question, somewhat complex, judged by past Census standards, but extremely simple in comparison with those pressed by

[1] Census of England and Wales, 1921. Dependency, Orphanhood, and Fertility. London: H.M. Stationery Office. 1925. Pp. 253. £1 10s.

enthusiastic amateurs whenever a Census is under discussion, was not very satisfactorily answered. It is too much to expect the various enthusiasts who clamour for national stocktakings of this or that character of, as they claim, racial importance to read the reports of our Censuses; but level-headed persons before supporting any of the proposals of enthusiasts or condemning the conservatism of bureaucrats should certainly do so. The inquiry, as will have been seen, had no express relation to the subject of nuptial fertility, but there was a necessary connexion because the statistics enabled the following ratio to be calculated: Number of children under 1 year of age *divided by* total number of married men (or married women). This ratio could be computed for geographical and (for married men) occupational subdivisions. This measure is, of course, different from the ordinarily employed fraction: Number of children born in a year *divided by* average number of married men (or women) exposed to risk during the year. One cannot be converted into the other by a constant multiplier because of variations of both infant and adult mortality. But, nevertheless, the two ratios are highly correlated, and a rate of fertility deemed high (or low) by the use of one ratio would still be classed as high (or low) if the other index could have been calculated. There is also a source of error—viz., that these data include step-children, so that one may find, and does find, some infants credited to parents outside the normal range of fertile ages. In spite of these defects, the compilers are, we think, justified in holding that the tables "with liberal and intelligent treatment" provide an interesting study of the incidence of fertility among various sections of the population during the year preceding the 1921 Census. We cannot, of course, discuss the details of this tabulation, which will, no doubt, be examined in the final report. A few points may, however, be noted. The contrast between the mining districts of the country and other parts in respect of fertility is very obvious. Using the ratio of children under 1 to married men of all ages as the standard, and putting the ratio for England and Wales as 100, the figure for Durham is 134, for Northumberland 116, for Monmouth 128, for Glamorgan 121. On the other hand, the figure for Sussex is 79, for Devon and for Surrey 82, for Dorset 88. An occupational comparison brings out the same contrast. The figure for mining and quarrying occupations is 150, for agricultural occupations 90, for textile workers 83, and for professional occupations 66.

No tabulation of vital statistics can fail to show the consequences of the war, and the table of the orphanhood of children under 15 is a case in point. If one works out the percentages of children aged 1, 2, &c. (boys), whose mothers were dead at the Census date, the percentages are as follows: Boys, aged 1, 0·64 per cent.; aged 2, 1·25 per cent.; aged 3, 1·69 per cent.; aged 4, 1·97 per cent.; aged 5, 2·24 per cent.; aged 6, 2·58 per cent.; aged 7, 2·95 per cent.; aged 8, 3·24 per cent.; aged 9, 3·66 per cent.; and aged 10, 3·92 per cent. Plotted on a chart these percentages increase smoothly, a straight line joining the first and last runs near all of them. The percentages of fatherless boys are different. They are 1·62, 3·55, 4·66, 5·88, 6·89, 8·06, 8·56, 8·77, 9·17, and 9·64. If these are plotted and the first and last joined, the points lie on a bent bow of which the line is the string. The points diverge more and more from the line to a maximum distance for the children aged 6, and then pass back towards the line. The principal factor of this difference is, of course, the destruction of life in the war. Between 3·5 per cent. and 8·6 per cent. of all children born during the war are fatherless, and from 1·25 per cent. to 3 per cent. are motherless.

GASTRIC CANCER AND GASTRIC ULCER.

CONFLICTING evidence renders it very difficult to decide what part, if any, a simple gastric ulcer takes in the genesis of carcinoma of the stomach. The subject came up for some consideration during the American post-graduate visit to London. Mr. JAMES SHERREN, in a short address reproduced on p. 1266, stated that he had never seen carcinoma develop after gastro-jejunostomy for a small mobile ulcer on the lesser curvature, although it was none the less true that in at least a quarter of cancerous stomachs evidence of preceding simple ulcer could be found. Dr. CHARLES MAYO, at the Surgical Section of the Royal Society of Medicine, also remarked on the rarity of cancerous degeneration in small ulcers. The question is of much more than academic interest. It is of very great practical importance to the operating surgeon. Should he hold the belief that gastric ulcer is a material factor favouring the development of malignant disease, he must, logically, incline to excision in all cases where it is technically possible, for the alternative treatment of gastro-jejunostomy is not claimed to be invariably successful in promoting cicatrisation even by its staunchest advocates. An interesting contribution to the subject has recently been published by Prof. J. H. DIBLE.[1] He gives the results of an inquiry instituted by the Manchester Pathological Society. The material used was chiefly specimens removed at operations in the Manchester and Salford Hospitals. Of those 126 cases in which the clinical and naked-eye appearances pointed to simple ulcer, the histological evidence confirmed the diagnosis without a single exception. He points out, what other pathologists have drawn attention to, that near the edge of an ulcer down-growths of epithelium can be found which are not evidence of malignant disease though they are apt to be interpreted as such. They were found in 32 per cent. of the series under discussion and seem to be the result of the distortion of the tissues which takes place in the process of healing. In 23 cases diagnosed clinically as carcinoma and excised, and in which the lesions were at a sufficiently early stage to afford results capable of interpretation, in 19 no evidence was found in any way suggestive of pre-existing ulceration, and in 9 the weight of evidence was against any causal associations of chronic ulcer with carcinoma. There were five cases in which, on histological grounds alone, the appearances might be taken to mean that malignant disease had been grafted upon a chronic ulcer. The author also points out that the site where cancer is most frequently seen, that is, in the vicinity of the pylorus, is not the most common site for chronic ulcer, which, in 73 per cent. of cases, is the lesser curvature. His conclusion is that transformation of a chronic gastric ulcer into a carcinoma is a possible but rare occurrence.

In contrast with that view is the recently expressed opinion of H. FINSTERER.[2] In 175 resected callous ulcers of the stomach, 27 per cent. showed malignant degeneration, contrary to the experience of the Manchester surgeons. He says that it may be impossible to tell clinically, by X rays, or on the operating table, whether an ulcer is malignant or not. In

[1] Brit. Jour. Surg., 1925, xii., 666.
[2] Wien. Klin. Woch., 1925, xxxviii., 295 and 321.

145 gastric resections there were 31 carcinomas, where all the available evidence, until a histological examination had been made, pointed to the lesion being a simple one. The case-histories of five recent cases are given, and in two of these a Haudek's diverticulum on the lesser curvature was demonstrated early in the disease. It would seem that it is very easy to overlook the degenerating area of a chronic ulcer unless a searching microscopic examination is made. The end-results when such ulcers are excised, under the mistaken belief that they are simple, are disappointing. Local recurrence is not common, but in the majority of cases death occurs from metastases in the liver or retro-peritoneal glands. FINSTERER says that it is easier to recognise beginning malignant degeneration in a simple ulcer by a change in the clinical symptoms, than to be certain of it on the operation table. From his extended experience he strongly adheres to the view that wide resection in simple gastric ulcer is to be regarded as a procedure prophylactic against future malignant disease. There is thus at the present time a frank divergence of view between surgeons of distinction on the best method of saving the patient's health and life in this common malady. It is essentially a matter which only a further collection of pathological evidence will decide.

MODERN TECHNIQUE.

IN the manifold duties asked of the family doctor effective treatment of any and every ailment takes the first place. That is all that is asked, for the most part, by those who have no conception of the size of the demand. The careful elucidation of the nature of the disease, necessarily of paramount importance in the medical schools, is less appreciated in practice than the palliation of symptoms, though every logical method for healing must be based upon an accurate nosology. Those in practice often require help most urgently in situations where recent developments of medicine or surgery have led to practical therapeutics whose virtues are open to proof. When in January, 1923, a series of articles entitled "Modern Technique in Treatment" were initiated in THE LANCET, the welcome given to them by our readers was cordial to a point which we had hardly dared to expect. Their reissue as books was not contemplated, but many practitioners throughout the country have urged that the series could usefully be reprinted in handy volumes, and accordingly the contributions to the series which had appeared during the first year and a half of publication have been collected together and issued in book form on June 10th. The 76 chapters in the first volume cover a wide range of subjects. Some deal with well-defined diseases and suggest a specific curative agent; others treating of symptoms common to many conditions—such as toothache, constipation, or hæmorrhage from various sources—recommend the palliative treatment which is called for pending the investigation of the underlying condition.

The demand for this first volume encourages us to continue to devote space in THE LANCET to these articles, and publication of them in collected form will be made from time to time. It is our hope thus to set out in a handy manner a balanced and representative statement of the treatment at present advised, and, especially, to stimulate workers both in academic and applied branches of therapeutics to examine and record any promising methods for trial under controlled conditions.

Annotations.

"Ne quid nimis."

ACCIDENTAL STRYCHNINE POISONING.

AT a recent inquest on a child, aged 11, who died from the effects of strychnine poisoning, it was stated that the nurse accidentally gave 4 drachms of the medicine instead of four drops—that is, roughly, 60 times the quantity prescribed. In this country, fortunately, accidental deaths from strychnine poisoning are very few. The Registrar-General's return for 1921 and 1923 gives the number as five and three respectively for all ages, whilst the total deaths from strychnine poisoning and for all ages are 20 for each of the two years quoted. In the majority of cases the source of the strychnine is not stated, so that it is impossible to say how far medicines and how far vermin-killers are responsible. It is, of course, possible that the total numbers may be slightly in excess of these figures, as it is likely that some cases are not recognised; but in any case it may be safely assumed that the total is not much above 25 per year. Further, in the two years quoted 15 cases in each year were due to suicide. Additional restrictive legislation has from time to time been advocated, but from these figures it seems hardly necessary. In America, however, a very different state of affairs exists, for out of 70 deaths from accidental poisoning during 1924 among children between 1 and 4 years of age, insured in the Industrial Department of the Metropolitan Life Insurance Company of New York, strychnine compounds accounted for 24. In the majority of cases cathartic pills left within the reach of the child were the occasion of poisoning. In other cases tonics (presumably prescribed for adults) were taken with fatal results by the child. The fatal cases were scattered over the whole of the United States and Canada, and the *Statistical Bulletin* of the company comments that evidently the danger of strychnine compounds is not generally appreciated. Such highly poisonous drugs, the *Bulletin* suggests, should be procurable only on a physician's prescription. Roughly speaking, the population of England and Wales is about one-third of that of Canada and America combined, but even when allowance is made for the relative populations the difference is striking. It would be interesting to learn the ratio between the deaths of insured and of uninsured children, for the insurance factor may be the important one. Should the relatives of the child benefit financially at its death, the explanation of a certain amount of laxity may be found in countries where no legislative restriction has been imposed.

THE SPECIAL VULNERABILITY OF THE MACULAR FIBRES.

THE special vulnerability of the macular fibres and "sparing of the macula" is the subject of a suggestive paper contributed by H. M. Traquair to the *British Journal of Ophthalmology* for February, 1925. Though certain forms of disease of the central visual elements appear to support the hypothesis of special vulnerability, the author says that "when we examine the evidence closely it becomes clear that while the central elements as a whole are easily affected it is by no means always those whose physiological function is most highly elaborated which suffer soonest or most severely." Thus the scotoma of toxic amblyopia begins, as a rule, as a paracentral rather than as a central defect, and in recovery from retrobulbar neuritis a rapid access of central vision may occur while there is still a ring scotoma. With regard to the vexed question of "sparing the macula" in hemianopic affections, he claims that only in wounds in which actual destruction by trauma of the macular cortical centre or its fibres can take place is division of the fixation area at all common. In certain vascular lesions, however, the

macular area may be divided, and in the case of tumours which gradually compress the radiations the fixation area may be spared at first and divided later. The functional superiority of the macular neurones suggests that a greater degree of interference may be required to put them out of action, whether it is caused by vascular disease or by pressure on the radiation by a tumour.

The subject is one concerning which it would be unwise to dogmatise, and it is complicated by the fact that there are still differences of opinion about the projection of the retina on to the cortex of the brain. Dr. B. Brouwer, of Amsterdam, in a recent lecture, arranged by the University of London, related experiments on certain monkeys, demonstrating that the projection of the macular fibres in the geniculate body occupies a large portion of that structure. If a corresponding diffusion of macular fibres is found to take place in the occipital cortex it will be a factor which must be taken into account.

FIFTY YEARS' PUBLIC HEALTH WORK IN ARGENTINE.

IT is not often that a medical man is invited by a learned society to recount the story of his life, but one who has organised and maintained a public health service in a country for over 50 years has justly something to his credit of which he may be proud to talk, and in April last Dr. Emile R. Coni presented a report of his activities before the Academy of Medicine in Paris. Dr. Coni was of French ancestry, and he tells how, during his student days in the hospitals at Buenos Aires, he was appalled at the conditions then existing. Suppuration abounded, the wards were in a dreadful state of dirt and disorder, tuberculous patients were relegated to damp cellars, where they died, "devoured by flies and by consumption." While still a fifth-year student he was elected as an honorary member of the only medical society then existing in Argentine and he became editor of the *Revue Médicale*, the only medical journal in the country, and in this publication he conducted an active campaign against the terrible conditions in the hospitals. When qualified he continued by means of journalistic work—for the pen was ever Dr. Coni's ready weapon—to press for some measure of reform in hygienic conditions in general, and after about 20 years of private practice he decided to devote himself body and soul to public health work. In 1880 he was able to begin to put into practice some of the measures which he had urged through the medium of the *Revue Médicale*, and he claims to have proposed the establishment of a ministry of health before this centralisation of public health activities was envisaged in Europe. In 1896 and 1897 Dr. Coni was appointed to carry out a sanitary survey of two of the Argentine provinces, Mendoza and Corrientes, and despite enormous difficulties he succeeded after many years in bringing about some centralisation of control with the establishment of efficient water-supplies, drainage systems, and complete public health services. Almost every branch of social medicine in Argentine appears to owe its foundation to the energies of this remarkable man. His first important publication, which appeared in 1879, was on infantile mortality in Buenos Aires, and in 1885 a thesis on the same subject brought him a valuable prize from the Faculty of Medicine of that city and the silver medal of the Academy of Medicine of Paris. He founded child welfare work, organised a system of school medicine, and eventually succeeded in obtaining instruction in infant welfare for girls in nearly every educational establishment in the country. The state of maternity work in Buenos Aires when Dr. Coni first turned his attention to it was appalling to the last degree, but at the present day, thanks to his untiring efforts, the town can boast six municipal and two national maternity homes. Campaigns in Argentine against tuberculosis, alcohol, venereal disease, leprosy, and even tobacco have all received much of their initial stimulus from Dr. Coni. His titles and distinctions would occupy a page; as a statistician he has set the study of disease in his country on a scientific basis; his publications, both in French and in the language of his adopted country, would fill many volumes; he has taken an active part in the municipal work of Buenos Aires, and he is acknowledged throughout Latin America as a brilliant pioneer in the field of public health. At last, broken in health and almost poverty-stricken, Dr. Coni was granted a pension by the Argentine Government, and he returned once again to France to give an account of his manifold activities before the Academy of which he had been a member for over 25 years.

AN OUTBREAK OF FOOD POISONING AT PLYMOUTH.

Dr. A. T. Nankivell, medical officer of health, Plymouth, has recently reported to the Plymouth Guardians upon an extensive outbreak of food poisoning which occurred amongst the inmates and patients at the workhouse and infirmary on April 30th. Out of a total of 730 persons no less than 308 were attacked, while, in addition, there were cases which did not report sick. The symptoms were those of gastro-enteritis of varying severity. There were no deaths, and all the patients were practically well within 24 hours of the onset of symptoms. The incubation period is not given definitely, but as the peccant meal was the midday dinner, and the symptoms came on during the same evening, it was obviously only a few hours. Owing to the fact that nine women engaged as charwomen, who resided outside the institution, were all attacked in their own homes, and their only meal in the institution was the midday dinner, it is possible to incriminate this meal with certainty. This meal consisted of beef, potatoes cooked under the beef, mince, gravy, cabbage, bread pudding, sago pudding, and milk. The beef itself was not the cause, since the rest of it was traced, while those portions not cooked by the kitchen staff of the main workhouse and eaten by 64 of the staff caused no illness. Dr. E. Wordley, the Plymouth borough pathologist, examined samples of all the food bacteriologically and found no food poisoning bacilli. He also failed to find these organisms in the fresh fæces of 12 patients or in the vomit of another patient. Blood from sufferers ten days after the attack were all negative.

The clinical and bacteriological findings suggest that the outbreak was not due to a living bacillary infection, and Dr. Nankivell considers that it was due to a heat-resisting toxin of one of the Salmonella groups of organisms. To explain its origin in the food the procedure in the workhouse kitchen was carefully investigated. Food left over from one day is used on the next. The unused gravy and stock is tipped from the stock-pot into enamelled iron bowls and placed in the larder. The stock-pot is then cleansed, and on the following day the stock from the enamelled bowls is placed again in the stock-pot and re-heated. Some of it is used for putting in the pans in which the beef, and the potatoes under the beef, are roasted. The stock never dies. An infection of the stock by a food-poisoning bacillus would result in the stock in the larder containing abundance of these bacilli by next day. The re-cooking of such infected stock would kill the bacilli but leave the heat-resistant toxins undestroyed. This very reasonable hypothesis is suggested as the source of the toxins. Careful attention was directed to the kitchen staff to try and ascertain the source of the food poisoning bacillus. Apart, however, from the fact that it was ascertained with probability that the chief cook became slightly ill with diarrhœa and vomiting on April 28th and 29th, and that one of the assistants was habitually most careless about his personal hygiene, nothing very definite was forthcoming on the epidemiological side. Bacteriological samples were examined by the bacteriologist to the Ministry of Health. The blood samples from all members of the kitchen staff were negative, presumably as regards agglutination, while

fæces from the kitchen staff were all negative except from the chief cook. This was found to contain "bacilli culturally resembling *B. suipestifer*, but these have shown no serological affinities with the stock *B. suipestifer*." It is suggested that this officer was the source of infection of the food. While this is a possible hypothesis it is not more than a hypothesis, and there are facts which militate against it. In particular, if this cook suffered from an infection with a living Salmonella strain sufficient to cause a definite attack of gastro-enteritis it is to be anticipated that his serum would give a positive agglutination reaction with the infecting bacillus, whereas his blood reactions were negative. While the larder was kept very clean, the possibility of contamination from dirt, dust, and flies was not excluded.

The outbreak was worked out with great care by Dr. Nankivell and his assistants, and he concludes his report with recommendations that steps should be taken to exclude dust and flies from the food, that only persons of known cleanly habits should be employed in the kitchen, and that it should be an instruction to all members of the kitchen staff to wash their hands thoroughly after defæcation and to wash their hands on coming on duty into the kitchen.

FURTHER EXPERIENCE WITH RADIUM.

IN the May issue of the *Irish Journal of Medical Science* Dr. Walter C. Stevenson writes on 174 cases treated by him with radium during the year 1925 (evidently a misprint for 1924). The cases treated naturally divide themselves into two classes, the malignant and the innocent. The technique employed in the former is to bury steel needles, and in many cases to reinforce this by the application of radium to the external surface. Dr. Stevenson is a believer in the theory that better results are obtained by placing the radium at some distance from the skin, and to obtain this end he places an empty match-box between the skin and the applicator. His ideal procedure in a case of carcinoma of the breast is to irradiate the diseased area four days before amputation and, immediately after the removal of the breast and axillary contents, to insert tubes of screened radium into the wound, thus giving a further dose to any malignant cells that have escaped both the first irradiation and the surgeon's scalpel. Apart from malignant tumours Dr. Stevenson has treated with radium such various conditions as fractures, "injuries to elbows," lumbago, toothache, colitis, acute sciatica, and tonsillitis, stating, rather surprisingly, that "to my mind it is quite rational to use radium in acute pneumonia, in the acute stage." Radium is so steadily gaining ground in the treatment of many forms of cancer and in not a few forms of non-malignant diseases that unsubstantiated claims are the more to be regretted. In the same issue of the journal Mr. Maurice R. J. Hayes gives a short but complete résumé of the modern treatment of rodent ulcers by radium; he has come to the conclusion, after a long experience of treating these conditions both by surgery and X rays, that radium is the ideal weapon to employ. His experience of carcinoma of the lip is confined to recurrent growths following operation. Those cases which were treated early, before the disease had implicated the glands, did well, but those in which the glands were already infected were not much benefited. Full details are given of a number of advanced cases of inoperable carcinoma of the uterus and cervix. All these were rapidly improved by "needling," but the difficulty he has found is in dealing satisfactorily with the glands. If a method could be devised to destroy the malignant cells in the pelvic and abdominal glands or to prevent their infection, a very great advance would have been made in the treatment of this condition. In none of Mr. Hayes's cases did a rectal or vesical fistula develop—a fact which goes to show once again that in nine cases out of ten the formation of a fistula is to be blamed, not on the radium, but on the method in which it is employed, if not on the natural progress of the disease. Mr. Hayes comes to the conclusion that the best results in carcinoma of the uterus are reached by a combination of radium and X rays; radium for those parts which are accessible, while the deeper-placed disease, such as abdominal and pelvic glands, is best treated by X rays. Further reports on his interesting scientific work will be welcome.

VOLUNTARY BOARDERS AT DARTFORD MENTAL HOSPITAL.

THE report of the visiting committee to the City of London Mental Hospital at Stone, near Dartford, for the year 1924, which has just reached us, confirms the announcement already made in these columns [1] that this institution now has the statutory right to receive voluntary boarders. The Act conferring this right has also permitted the all-important change in name from "asylum" to "mental hospital." The time is indeed more than ripe for the extension of these privileges to other public institutions in the country. Since the passing of the Bill in July last five voluntary boarders have been in residence at Stone, and their number will no doubt increase steadily. We learn, further, from the report that the principle of allowing patients out on parole has been used with much success in a large number of cases, and the way to discharge has been paved in a few instances by granting short leaves of absence, up to four nights. A valuable feature in the works department at Stone during the year has been the provision of further open verandahs, attached to the wards, whereby suitable patients can be nursed entirely in the open air. An operating theatre, pathological laboratory, and X ray room are being added. An increasing number of rate-aided patients are being fitted out with clothing, made in the hospital workrooms, which is similar to that of the private patients. The resignation of the medical superintendent, Dr. R. H. Steen, after a long period of ill-health, is a cause of much regret to all who are acquainted with the valuable services he has rendered to this important institution. His successor, Dr. William Robinson, lately superintendent of Brentwood Mental Hospital, will have a valuable opportunity for contributing to the study and treatment of mental disease under modern conditions.

SIR WILLIAM BARRETT.

Sir William Barrett, whose recent death, at the age of 81, has already been reported, was one of a distinguished group of scientific men whose observation was transferred as they grew older from incidental to transcendental phenomena. Assistant to Tyndall, his early discoveries concerned sensitive flames and certain curious properties of iron alloys, while a 37 years' long occupancy of the Chair of Physics at the Royal College of Science in Dublin gave him abundant opportunity for popularising the growth of physical science. Attracted along with Russel Wallace and Crookes to the exploration of obscure human faculties, he satisfied himself of the existence of a faculty of communion or communication between individuals independent of the recognised organs of sense. Sir Oliver Lodge, who writes his memoir in *Nature* (June 6th), notes that Barrett considered that he might hereafter be regarded as perhaps the chief discoverer of this faculty. His paper read to the British Association at Glasgow in 1876 on what was later called "telepathy" did not appear in the printed proceedings, but a letter of his in *Nature* five years later paved the way for the foundation of the Society for Psychical Research. Barrett's other inquiries included the sensitiveness of certain people to magnetic fields, and the faculty possessed by some for finding water or other things by means of an unconscious physical reaction. He was the recipient of a vast correspondence from all parts of the world, recording

[1] THE LANCET, 1924, ii., 709.

extraordinary happenings, a selection of which appeared in the Proceedings of the Society, which had a branch of its own in Dublin. Barrett's friends could not always keep up with one whose eagerness to follow clues made companionship stimulating to the point of unrest, but fully recognised the transparent honesty and simplicity of his character and his readiness to undertake any labour to get phenomena properly observed and recorded. He was, as Sir Oliver Lodge reminds us, never deterred by ridicule or opprobrium from following such clues as he could find. Death did not seem to Barrett to be an interrupter of mental continuity, and he did not fear it.

THE HYGIENE OF A TORNADO.

AT 2.28 P.M. on March 18th last a tornado travelling at the rate of 60 miles an hour along a path about a mile wide struck the town of Gorham in Illinois, and crossed five counties, remaining in contact with the ground the whole time. The population of the devastated territory numbered about 200,000, being largely rural with one or two towns of up to 10,000 or 12,000 inhabitants. Among this population the local public health service was mostly in a primitive state, and the *Illinois Health News* for May gives an account of steps taken by the State Health Department to deal with the problem. The towns of Murphysboro' and West Frankfort had public water-supplies, but in most parts of the area drinking-water was obtained from private wells and cisterns, many of the former liable to surface pollution. There was no local control over milk-supplies in the area before the tornado and the only pasteurisation plant was at West Frankfort. At Murphysboro' and West Frankfort there were public sewerage systems; otherwise privies were the rule. None of the communities had a system for the collection of refuse. Many hundreds of horses and cows and domestic animals were killed by the tornado. Many people were rendered homeless. The first news of the disaster reached Springfield at 8 P.M. on the same day, and a special train left with a rescue party on board, arriving at Murphysboro' at 2 A.M. the following morning. By the morning of the 20th the five sanitary engineers of the State Department were in the area, and within 36 hours a complete health department was functioning with headquarters at Carbondale. Medical and nursing relief to the injured was provided, the dangers of communicable diseases were met by isolation and immunisation, and sanitary measures were adopted. All the work was done in close coöperation with the military authorities, who were charged by Governor Small with the responsibilities of relief and re-habitation. The medical and nursing relief work was turned over to the Red Cross organisation on the second Sunday after the disaster. Temporary emergency work was followed by organisation on a permanent basis to handle problems which are sure to continue for a year or more. A diagnostic laboratory was established at Carbondale, while the sanitary work was extended to include control of the water-supply, the milk-supplies, and the disposal of refuse. There has always been an excessive prevalence of typhoid fever and malaria in this area, and the prevention of both these diseases received attention. During the first two weeks about 4000 persons were immunised against typhoid, and probably about 20,000 will have been inoculated before the campaign ends. In the wake of the storm there arose conditions extremely favourable to the development of epidemics, especially typhoid fever. The injured were liable to tetanus and gas gangrene. A month after the disaster no epidemics of any kind had appeared in the affected area. Only five or six deaths resulted from tetanus and gangrene among the thousands who were injured. The activity of the State Health Department in the tornado zone and the success of their operations has created a demand for a permanent local health organisation. Wells and water-supplies which were temporarily disorganised were subjected to extra chlorination; tent camps were established for the homeless; arrangements were made for the removal of refuse; carcasses of dead animals were burned and buried.

One result of the disaster will certainly be an improvement in public hygiene. In our crowded country, with a local sanitary authority in every district, it is difficult to realise the great responsibility thrown upon State departments administering huge sparsely inhabited districts in which there is practically no local health organisation. The State Department of Public Health in Illinois is to be congratulated on the promptitude exhibited in dealing with the effects of the tornado.

THE MEDICAL WHO'S WHO.

THE seventh edition of this work of reference, dated 1925, has just reached us, regret being expressed for the delay, which is attributed largely to the entire resetting and alteration in size from former editions. The last appearance of the volume was in 1918, when, owing to the death of its then editor, it fell into abeyance. In this volume such consultants and specialists as have returned the forms supplied to them have taken the opportunity of stating precisely the nature of their work, and general practitioners have indicated in many cases the professional studies in which they are particularly interested. At the end is an alphabetical index of towns with the names of practitioners there resident. The volume contains, besides, certain personal data which are otherwise not accessible. The list of questions to practitioners, on the answers to which the book is based, was submitted to the General Medical Council, which took no objection to them. The volume contains no name which does not appear in the Medical Register. It is well printed and produced in handy form for the reference shelf. The price is 30*s.*, from the Grafton Publishing Company, Ltd., 8, Stone Buildings, Lincoln's Inn, London, W.C. 2.

PEMPHIGUS NEONATORUM.

Two recent outbreaks of pemphigus neonatorum in maternity homes have induced the Ministry of Health to issue a Memorandum [1] on the subject. In the first outbreak 23 babies were more or less severely infected, the disease appearing first round the finger-nails and spreading thence to other parts of the body. Three mothers suffered from mammary disease, and there were two cases of puerperal fever, one of which proved fatal. In the second outbreak the number of cases was much smaller; all were slight in degree, and there was no infection among the mothers. There were no fatal cases in either outbreak and in neither could the source of the infection be ascertained. The Memorandum distinguishes between a mild type of pemphigus associated with little or no systemic disturbance and recovering within a few weeks, and a grave type which usually terminates in pulmonary œdema, the latter being the result of infection from an unhealed umbilical wound. No definite pronouncement is made as to the true causal organism, although most authorities consider pemphigus to be an infantile form or variant of contagious impetigo. In the mild type the portal of entry is presumed to be some slight lesion of the skin, the carrier being the mother, nurse, or midwife, either directly or through infected clothing, to which the infective agent seems to adhere with great tenacity. In the majority of outbreaks the attending midwife is the suspect; in one instance a small pustule was found on the midwife's finger, but examination has often failed to reveal any infective lesion. The first requirement in prevention is early diagnosis, and the Memorandum regrets the lateness in some cases of the report made to the local supervising authority. The midwife or nurse suspected of being the agent of spread should be suspended from practice until

[1] Memo. 103/Med. H.M. Stationery Office. 1*d.*

rendered free from infection and required to report after resuming practice. The disinfectant measures at present employed may reasonably cover a wide range since the mode or modes in which the disease may be spread are imperfectly known.

INTRAPULMONARY INJECTIONS FOR INTRACTABLE HÆMOPTYSIS.

COPIOUS hæmoptysis is so serious a symptom and so alarming to the patient that any effective addition to the means of treating it is welcome. We publish a short clinical note from Dr. Andrew J. Morland, describing a case in which the direct injection through the chest wall of coagulen (Ciba) into a cavity was followed by the arrest of the bleeding with dramatic suddenness. There are on the market several compounds of this kind prepared from the serum of different animals. There is some evidence that they are useful in cases of hæmorrhage from the lungs, stomach, or bowels when given by subcutaneous or intravenous injection. Coagulen is said to be rich in thrombokinase, and its action is therefore readily comprehensible. The method would seem to be worthy of further trial in cases where copious and repeated hæmoptysis occurs. It is, of course, not always easy to determine in a given case with extensive disease the exact situation from which the bleeding arises, but in Dr. Morland's case it was known that there was a large cavity, and bubbling râles were plainly audible over it while the hæmorrhage was in progress. Experience with intratracheal injections has shown that the lung tissue will tolerate substances like menthol, guaiacol, and olive oil, reaching it through the air-passages. Modified serums of the type employed by Dr. Morland are usually bland substances, and it is therefore not surprising that they can be injected directly into a cavity within the lung. It is a recognised principle in surgery that where possible the bleeding point should be dealt with directly. Dr. Morland's attempt to apply the same principle to bleeding from the lungs is rational, and it is gratifying that in his case such good results were achieved. His experience would seem to warrant further trial of this method in suitable cases.

IMPERIAL ENTOMOLOGICAL CONFERENCE.

THE second Imperial Entomological Conference is being held in London from June 9th to 18th at the instance of the Imperial Bureau of Entomology, and summoned by the Secretary of State for the Colonies. This meeting is the outcome of the first conference held in 1920, when it was decided to hold such meetings every five years to further and coördinate the work of tropical and subtropical entomological research throughout the Empire. Particular interest should attach to this conference as it follows so closely on the international conference held in London last month [1] under the auspices of the League of Nations, for the purpose of setting up an international commission to study sleeping sickness in tropical Africa. The present chairman of the Imperial Bureau of Entomology is Lord Buxton, and the director is Mr. G. A. K. Marshall, D.Sc., F.R.S., assisted by Mr. S. A. Neave, D.Sc. The subjects which are being discussed at the Royal Society's rooms in Burlington House during the sitting of the conference deal with the widest aspects of entomology, and Prof. Warrington Yorke on Monday, June 15th, will consider the medical aspect in a paper on Coördination of Effort in Tsetse-fly Investigation.

Mr. S. P. Vivian, whose name appeared in the Birthday Honours List with a C.B., was intimately associated with drawing up the medical benefits regulations under the National Health Insurance Acts, and, since his appointment as Registrar-General, has been freely accessible to suggestions for increasing the usefulness of his department to those engaged in health administration.

[1] THE LANCET, May 30th, p. 1155.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CXXVI.—THE TREATMENT OF HAMMER-TOE.

PART I.—GENERAL CONSIDERATIONS: CONSERVATIVE MEASURES.

Prophylaxis.

THE prophylactic treatment of hammer-toe deformity necessitates the use of shoes and stockings of sufficient length in the actively growing age, and correct posture in standing and walking. Shoes should be broad in the toe portion, straight along the inner borders, and not too pointed. The tendency to deformity should be detected early and rectified by the use of metatarsal bars or anterior arch supports, and by such active and passive movements as encourage the flexion power and range of the toes.

While the term *hammer-toe* is often loosely applied to any flexion deformity of the toes that may be found associated with various malformations of the foot, it should be more correctly reserved to describe a fixed flexion deformity. Of this there are two types, the *acquired* and the *congenital*, and in both the condition is commonly bilateral.

The *acquired* form is the more common; it involves the second toe, and is associated with hallux valgus, the combined deformity resulting from too short and too pointed footwear in the growing age, and from the improper method of walking with feet everted. The second phalanx is flexed on the first, and the latter is slightly over-extended at the metatarso-phalangeal joint. The terminal phalanx is in line with the second, or flexed or extended on it. The approximation of the tips of the great and middle toes buries the two terminal phalanges of the second toe, forcing them into a vertical position, while the proximal phalanx remains horizontal. The vertical portion of the toe is pinched at the top and bottom by the shoe; a painful corn forms on the head of the proximal phalanx and another on the tip of the terminal phalanx, just at the end of the nail, which becomes thickened and distorted. The tip of the toe is swollen, broadened, and flattened. On the dorsum of the metatarso-phalangeal joint the extensor tendons become contracted, maintaining the hyperextension deformity at this joint. A similar contracture occurs in the capsule and flexor tendons on the plantar aspect of the acutely flexed proximal interphalangeal joint, which after a time prevents straightening of the toe at this joint by passive movements. Occasionally the flexion deformity is in the terminal and not the proximal joint.

The *congenital* form differs from the acquired in that the middle toe is always involved, alone or together with the fourth and fifth. The proximal, and particularly the terminal, joints are both flexed to some degree; and the terminal phalanx is rotated and twisted, underlying its mesial neighbour. In infancy the toes can be straightened by passive movements, and are therefore amenable to conservative treatment. A slight adduction of the little toe alone, and with no disability, is so common that it cannot be considered abnormal.

In its less strict application "hammer-toe" may denote flexion deformity of the toes, associated with exaggeration of the long arch (*pes cavus*). All the five toes are involved, and usually bilaterally. These should be described as "clawed" rather than "hammer" toes. Hyperextension contracture of the metatarso-phalangeal joints is more marked than in real hammer-toe. Both the terminal joints are flexed, but the toes are drawn towards the dorsum of the foot, with no pressure effects on the tips, and the terminal flexion is more easily corrected by passive stretchings than in real hammer-toe.

In some cases of hallux valgus all the smaller toes are flexed in the two terminal joints and pushed backwards into adduction and dorsiflexion by pressure of pointed and short footwear, resembling "clawed" toes, but with the addition of the adduction. The great toe is valgus, and not "hammer" shape, thus distinguishing this boot-produced deformity from real pes cavus and claw toes, where the great toe is also hammer-shaped and less valgus. In rheumatoid arthritis the toes may be similarly deformed.

In any "hammer" and "claw" condition involving several toes, the anterior transverse arch is depressed and painful callosities form on the balls of the central toes. The corresponding metatarso-phalangeal joints may exhibit mechanical synovitis, due to weight stress being unrelieved by the deformed toes, which are unable to assume the normal flexion effort in the "push-off" in the last part of the step in walking. Toes that will not flex and grip the ground in the "push-off" are functionally useless.

The indications for treatment of real hammer-toe are: (1) The relief of pain from pressure on the dorsum of the prominent proximal interphalangeal joint or on the tip of the toe at the nail. (2) To fulfil the requirements necessary for admission into some of the public services. (3) For cosmetic reasons in children. There are two general procedures. (1) Conservative: By daily manipulations to correct the deformity passively, with retentive splints to hold the toes straight by day and night. (2) Operative: The gradual method is so tedious and lengthy that in anything but the slightest degree of deformity, even in the case of children, I strongly advocate early resort to operation.

Conservative Measures.

Conservative treatment is indicated in early cases of acquired deformity, and in children when the parents prefer it. For the single deformed toe of the acquired condition the best splint is a short covered metal one, of the width of the toe, and extending from the tip to the ball of the toe, where the splint is expanded into a small plate. This is fitted with a padded elastic loop passing over and exercising pressure upon the prominent proximal joint, and by tapes or elastic to fix the rear end to the mid-foot. It can be worn without discomfort within the shoe by day, and also at night. Various modifications of this splint are on the market and can be obtained from any foot appliance shop. Palliative appliances can also be obtained, consisting of an elastic sheath for the toe, with a sponge rubber pad attached, protecting the dorsal or terminal corns from pressure. These appliances take the place of the old strapping method, which was tedious. Splints are of service only in cases that can be corrected passively.

In the flexed and adducted third and lesser toes of the congenital deformity the use of a corrective splint is more difficult, on account of the twisting distortion and the smallness of the toes. The appliance used is a separate leather insole within the shoe, fitted with elastic loops for the toes. It is known as a "half-sole plate with loops," the half sole being fixed to the forefoot by a broad elastic band or tapes over the instep; it can also be used at night.

When appliances are used passive stretchings should be done morning and evening, to flex the toes at the metatarso-phalangeal joints, and extend them at the proximal and distal interphalangeal. While there is no doubt that in the slighter and earlier degree of deformity conservative treatment, if carried out with patience and assiduity, is successful, yet it is so slow and so expensive in time, splints, boots, exercises, &c., that operative treatment is mostly to be advised.

W. H. TRETHOWAN, F.R.C.S. Eng.,
Orthopædic Surgeon to Guy's Hospital.

(To be concluded.)

DARLINGTON MEMORIAL HOSPITAL.—Darlington's war memorial is to take the form of a new hospital. The cost will be £196,000, and there will be 228 beds and accommodation for 46 nurses. The Ministry of Health and Darlington Town Council will provide the maternity and skin diseases departments.

Special Articles.

ROYAL INSTITUTE OF PUBLIC HEALTH.

ANNUAL CONGRESS AT BRIGHTON.

MAY 27TH–JUNE 1ST, 1925.

THIS Congress was attended by some 300 delegates and members from all parts of the country, while New Zealand, France, Belgium, Switzerland, Portugal, and America sent representatives. Lord Leconfield acted as President of the Congress. In his address he referred to the interest Sir Henry Harben had taken in the Institute. As a not inconsiderable landowner whose tenants go in for milk a great deal he had been interested in seeing the report of a clean milk competition, but after reading it was profoundly grateful that his doctor had prohibited him from taking milk in any form. Papers were read on May 28th and 29th, both in the mornings and afternoons; receptions followed by dancing were given by the Mayors of Brighton and Hove at the Royal Pavilion, Brighton, and at the Hove Town Hall. On May 30th a visit was paid to Worthing, where the delegates were entertained to lunch by the Mayor of Worthing and to the home of Lord Leconfield at Petworth.

Much of the success of the Congress was due to the excellent arrangements made by the medical officers of health of Brighton, Hove, and Worthing.

SECTION OF STATE MEDICINE AND MUNICIPAL HYGIENE.

Sir Arthur Newsholme, in his presidential address, indicated some of the long overdue reforms in our administrative machinery called for by the advancing complexity of our problems. No abstract could do justice to the well-thought-out argument, the logic of which was invincible.

Dr. C. W. Hutt (M.O.H., Holborn) opened the discussion on

Immunisation against Diphtheria.

The aim of everyone who took up the work, he said, must be to get all the children living in the area immunised as soon after they reached the age of 6 months as possible. Preliminary Schick testing was found to be advisable at the Holborn Council's maternity and child welfare centre; retesting after the routine injections of the toxin-antitoxin, although unpopular with parents, was very necessary. Of 202 that had been retested 20 were found to be Schick positive after three inoculations; neither age nor sex nor interval after immunisation seemed to have any influence on the phenomena. His experience was that the reaction after the toxin-antitoxin was in most cases negligible.

Dr. W. T. Benson (Asst. M.O.H., Edinburgh) stated that three-quarters of the cases of diphtheria occurred after the child was of school age, but only 40 per cent. of the deaths. He described the routine carried out in connexion with the immunisation of the children in the Edinburgh schools. The consent of the parents to the treatment varied from 11–86 per cent., according to the social status of the parents and the attitude taken by the school staff. He found the presence of parents at the examination was a disadvantage; it upset the child and upset the routine. Although parents were invited to bring children of pre-school age to the school for immunisation, very few availed themselves of the invitation. The children were re-tested from six to nine months after immunisation.

Dr. S. Monckton Copeman (late Ministry of Health) dealt with the difficulties of diphtheria immunisation; although the procedure was not difficult to learn some initial practice was necessary; the statistics were unreliable if the difficulties were not appreciated. He referred to the need of the injection being intradermal, and was in favour of the first injec-

tion even in school-children being 1/10th c.cm. of toxin-antitoxin. This injection could be given when reading the preliminary Schick test; if advisable the child could be given 1 c.cm. of toxin-antitoxin at the time of reading; in this way very little time would be lost and the chances of reaction minimised. He found that in the Farnham Poor-law schools, where the children came from rural areas, there was very little immunity present among the children, and they were correspondingly hard to immunise. He thought that no nurse or ward-maid should be asked to work in diphtheria wards unless she had been found to be Schick negative or had been immunised.

Dr. Duncan Forbes (M.O.H., Brighton) thought that the work should start first with the children in residential institutions in a town. All nurses in fever hospitals, all children suffering from scarlet fever, and all tuberculous children admitted to isolation hospitals should be immunised.

Dr. S. G. Moore (M.O.H., Huddersfield) gave an example where excessive instances of diphtheria had occurred among non-immunised children as opposed to the immunised children in the same school.

The same subject was dealt with in another Section by Dr. H. Stott (M.O.H., East Sussex Combined Districts), who had gone to the trouble of collecting several instances where immunisation had been carried out on nurses in fever hospitals.

Tuberculosis and Employment.

The discussion was opened by Dr. P. C. Varrier-Jones, who had been driven to the conclusion that in tuberculosis the unit to be dealt with is the family. Papworth was a sanatorium with 120 beds; in addition some 70–80 houses had been built for families of tuberculous men where they could live with their families and earn a wage to supplement their war pensions. The disability of the men varied from 20 to 100 per cent. In the outside world consumptives were refused work partly owing to the fear of infection, but more because employers feared that the consumptive would not be able to earn his wage. At Papworth they were producing three times the quantity they were three years ago. The unskilled man could be dealt with; he was quite content to work as a machine-minder doing repetition work. Tuberculous women could be fitted in with men in the colony. The foreman and managers should be consumptives; they took a more sympathetic view of the ailments and state of health of the workers; again, consumptives are very suspicious of healthy overseers.

Dr. Neville Cox (T.O., Brighton) stated that schemes to provide work for the tuberculous male population as a whole had been found to be too costly. He referred to the report of the Barlow Committee. The success of Papworth was due to the benevolent autocracy of Dr. Varrier-Jones. One advantage of Papworth was that the only qualification required was that the patient had tuberculosis; his sputum need not be free from tubercle bacilli. But for various reasons only a small proportion of the patients would go to Papworth; for the bulk work must be found in the ordinary industrial world. Apparently there was very little work a consumptive could not do, but there was real danger, however, in any tuberculous person looking after babies or children and in their close association with young adults, and a risk in their handling food. From statistics published in the Brighton annual report for 1923 it would appear that work in connexion with transport, such as tram and bus conductors, and taxi-cab drivers and railway work had the largest proportion of patients at work. Of 39 clerical workers 29 were at work. The critical time for a patient was the first two years after leaving sanatorium. Many of these were then fit for few hours work; these men ought to be employed in municipal workshops. An experiment is being made in Brighton where four men are engaged in woodwork, machinery being used; any work done is used for corporation purposes.

Mr. G. W. Allen (manager of the Factory in the Field, Leeds, situated in its healthiest suburb) gave an account of the work being carried on. The men lived in the city; the working day was spent in the healthy environment provided by the factory. Most, if not all, of the men he dealt with were ex-Service men with pensions varying from 8*s.* to 40*s.* per week. Over three years ago a society of these tuberculous men was formed; it was registered in order to limit the liability of the men. They started with £3000, apparently clubbed together from the tool grants provided by the Ministry of Pensions, and £3000 loaned by Lord Haig from the British Legion Funds. The key to the position was the use of machinery to avoid strain. They started with two army huts provided with the best electrical machinery for the particular work first taken up, the splitting and binding of firewood. Boot-making and repairing had not proved satisfactory because they had not been able to purchase the best machinery for the purpose. Brush-making, a skilled occupation, was their best trade. A few of the patients had been trained as commercial travellers and were paid £3–£4 per week and expenses. General utility work had been found useful—four men under a foreman who had been a joiner were engaged in small repairs to cottage property; they did anything from mending a water spouting to laying concrete. Removal of colliery refuse heaps from the areas within the city boundary had been remunerative.

Dr. H. de C. Woodcock (late T.O., Leeds) stated that 20 per cent. of the men who were working in the Leeds factory have tubercle bacilli in their sputum, a much lesser proportion than at Papworth. Although there had been hæmorrhage and actual deaths among these working patients he held that no more deaths occurred than if they had not been at work. The psychical value of work for the tuberculous was very considerable; any hope of recovery was taken away if the men were told they were no longer fit for work.

Several speakers referred to the attitude taken by Henry J. Ford, who considered that manufacturers should not only employ selected samples but all the members of the ordinary population of the district. He had found employment for tuberculous persons and even for the blind in his works.

A kinema demonstration on the Colony Treatment of Tuberculosis was given by Dr. Varrier-Jones.

Valuable papers on ionisation in ear discharge were delivered by Dr. A. R. Friel and Dr. R. Cramb (Brighton); evidently all engaged in treating school-children should follow these pioneers. A paper on the dental treatment of school-children was read by Dr. L. A. Parry (S.M.O., Hove) and Mr. Mackay, L.D.S. (Brighton).

Obstetrics and Public Health.

The discussion was opened by Prof. Louise McIlroy, who suggested that a panel of obstetricians should be formed among general practitioners who were interested in obstetrics; they should also be in charge of the antenatal clinics; in rural areas whole-time medical officers should be appointed to do the midwifery. Obstetrics should come under the public health service. She thought that the inspection of midwives by doctors was objected to by the persons inspected; this should be done by midwives of long experience such as the matrons of maternity institutions. Ordinary general practitioners were not suitable persons to serve on the staff of antenatal clinics; much experience was necessary, also study in the continental capitals such as Paris, Berlin, and Vienna; not enough material was available in London. It was not enough to have been a house surgeon for a year at an obstetrical hospital. She objected to notification of puerperal fever, and pointed out the lack of institutional accommodation for tuberculous pregnant women.

Dr. Eardley Holland dealt with stillbirths. He gave an account of the procedure of the subcommittee

at Geneva which was appointed to arrive at a definition of stillbirth; difficulty had occurred as to the fœtus in transient postnatal stage of its life. Usually the fœtus when born breathes at once and becomes a child; occasionally it has a postnatal existence and this causes confusion. The subcommittee had decided that breathing or a cry should be the sign of life; many births are attended by women of very little medical knowledge and these signs were easily recognisable. The placenta should always be examined as well as the fœtus if a post-mortem examination was made. The cause of death might be found to be retroplacental hæmorrhage, necrosis, or infarction. The part played by syphilis in causing stillbirth had been very much exaggerated. A syphilitic placenta could not be recognised as such by the naked eye; only one-fourth of all macerated fœtus and about one-tenth of all cases of viable fœtal death were due to syphilis. Every macerated fœtus should be examined post mortem for the existence of syphilis; enlargement of the long bones (osteochondritis) was the cardinal sign. The enlarged liver or spleen did not necessarily mean syphilis. Antenatal supervision, the strategy, was of no use without skilled attention during labour, the tactics. He thought that considerable medical skill was required to diagnose the minor degrees of pelvic contraction and to assess correctly the reproductive history of a woman. Early diagnosis of the toxæmias of pregnancy was not easy. The advocacy of an obstetric service was useless as it could not be manned. The teaching was very poor at present; we should strive for the better education of medical students and all doctors in post-graduate courses.

Dr. Moore pointed out that from 1901–24 in his borough area the death-rate among all mothers was 5·69 per 1000 births. Among those who voluntarily notified their pregnancy the death-rate was only 2·43.

Dr. G. Q. Lennane (M.O.H., Battersea) pointed out that owing to the rigid rules laid down by the Ministry of Health only 50 per cent. of the beds were occupied at the Battersea Municipal Maternity Hospital.

Dr. R. D. Smedley (M.O.H., West Sussex C.C.) considered any special accommodation available in workhouses used as a temporary measure. The local authority should pay for such accommodation and the mothers would then be admitted as private patients. He had made such arrangements for difficult cases and found it of great assistance. He thought that tuberculous mothers might be left out of the question; they should not have children; they were told so at the sanatorium, and things should not be made too easy for them. He had found that the inspection of midwives by a doctor had done a great deal to improve the practice of midwives, especially in the introduction of abdominal palpation.

Dr. H. Scurfield (late M.O.H., Sheffield) said that when antenatal clinics were started it was thought that the work would be confined to giving advice in cases of healthy women, but experience has shown that work in connexion with women whose health and physical condition was abnormal was needed. For antenatal work he thought that an experienced obstetrician was required.

Dr. D. Forbes saw no objection to the notification of puerperal fever. All that happened was that the M.O.H. obtained from the doctor a few particulars, and he was able to help the doctor by obtaining removal of the patient to hospital. He thought that the charge made by the doctor called in to render medical help was too high.

Prof. McIlroy, replying, thought that one advantage in the attendance early in pregnancy at the antenatal clinic was that arrangements could be made for the mother's confinement in good time. She thought that one of the objections of women to going into a Poor-law infirmary was that it could always be seen from the birth certificate of the child that it was born under the auspices of the Poor-law.

Control of Venereal Diseases by the Public Health Service.

The discussion was opened by Col. L. W. Harrison. He thought that the crying need at present was for better treatment of gonorrhœa. It was very wrong for a mother to bear one syphilitic child after another; propaganda in this respect should not only be left to societies—a word in season by the general practitioner would be of very great value.

Dr. F. H. Lawson (V.D. officer, Brighton) had found that it takes longer to see a patient in an ordinary out-patient department than in a special place set apart for the purpose.

Dr. Forbes stated that his experience was only a small amount of arsenobenzol was sent out locally from the Public Health Department and much of that was used by the V.D. officer in his private practice and by members of the honorary staff of the hospitals. In cases of stillbirth the midwife was paid 5*s.* for bringing the body to the Health Department which undertook its subsequent disposal. The liver was sent to the pathologist—in about 15 to 16 per cent. evidence of syphilis was found. The parents were informed, but very great difficulty was experienced in getting them to attend the clinic for examination and treatment if necessary, although the way was made easy for them by offering special appointments. In Brighton the V.D. officer is in close touch with the infant welfare centre, but unfortunately women will not go to the V.D. clinic to the extent that they should.

Dr. R. A. Askins (Bristol) considered that the divorce of the Public Health Department from the work of V.D. schemes constituted a real danger. Most of the V.D. work was carried out in practically watertight departments of hospitals. The M.O.H. was only an onlooker; this was all the more unfortunate, as he is usually an excellent propagandist, closely in touch with the general practitioners and the educationists of the town.

Dr. F. Bowerbank (New Zealand) mentioned that in New Zealand the number of women receiving treatment was very small; it was evident that many women were not receiving treatment. He thought that V.D. was better treated by a specialist than by a general practitioner.

Mrs. C. Neville Rolfe (British Social Hygiene Council) hoped that their Council would now be able to influence the adolescents of both sexes. In Canada and the United States to every V.D. centre was attached an almoner who dealt with the families of the patients and not with the patient alone. In this country we were doing a certain amount for girls but very little for boys. She referred to the Big Brother movement of the United States, where boys needing social adjustment were passed on by the almoner to a committee largely composed of business men interested in the Rotary movement. She hoped that as a result of the new Council's efforts they would be able to raise the standard of cleanliness and self-respect, and that in consequence the supply of professional prostitutes would be reduced.

Colonel Harrison, in replying, stated that great emphasis was laid on the importance of including general practitioners when the schemes were initiated. There is still free access to clinics, but practitioners do not attend to any extent. He agreed that very little use was made of the free supply of arsenobenzol, and felt also that the arsenobenzol that was given out was not used properly, each case evidently receiving two or three doses only. He agreed with Dr. Bowerbank that V.D. is better treated by a specialist; there was enough in syphilis alone to make a specialty in itself; a study of the treatment of gonorrhœa was brain-racking. General practitioners say they see so very little of venereal disease; they are apparently doing very little treatment, but they should certainly be trained to such a degree that they can diagnose a case of venereal disease when they see it. The Public Health Department

and venereal disease scheme started divorced. The Ministry of Health are now doing their best to bring these two bodies together. Letters are frequently sent out from the Ministry suggesting that the V.D. officer should be on the staff of the M.O. or appointed as his adviser in V.D.

Surg.-Cmdr. R. T. G. Parnell's paper, read in the Military Section, dealt with carefully observed series of cases of syphilis in which bismuth was used; it should be read by all those who are engaged in dealing with syphilis. Bismuth, he considered, has largely replaced mercury; it is more effective, far less toxic, and its effects on the patient are far less unpleasant; it was specially useful for chronic glossitis and chronic leucoplakia of the mouth. Unfortunately the mercury pill had no analogous bismuth preparation.

A film on the Treatment of Gonorrhœa in the Male was shown by Colonel Harrison.

SECTION OF NAVAL, MILITARY AND AIR FORCE HYGIENE.

In this Section, presided over by Sir William Leishman, a discussion on the

Teaching of Hygiene in the Army

was opened by Lieut.-Colonel J. A. Anderson, professor of hygiene at the Royal Army Medical College. Certain officers are selected for training as specialists in hygiene at the end of the general senior course of two and a half months taken after eight to ten years' service. The course lasts six months; the officers are required to obtain a Diploma of Public Health and also a knowledge of the application of the principles of hygiene to an army community both in the barracks and in the field. Included in the course is the study of the medical aspects of recruiting to which a whole month is devoted. To assist the student of army hygiene and sanitation two official text-books are available, an elementary one, "The Manual of Sanitation in its Application to Military Life," dated 1920, the other issued to all R.A.M.C. officers, the "Manual of Military Hygiene," 1921. Colonel Anderson thought that printed or pictorial propaganda of a popular type should be more used in the army.

General Sacquepée (France) gave an account of the teaching of hygiene in the French Army. He thought that the men being taught the value of cleanliness and simple hygienic measures would have a marked effect on the health of the civil population when these short-service soldiers returned to civil life. He mentioned that the addresses to the private soldier were supplemented by "tracts" and posters often conveying a pictorial lesson, but he placed even more reliance on the film.

Surg.-Cmdr. G. R. McCowen read a paper on the M.O.H. and Chemical Warfare, which has been very fully reported in the lay press. Major-General W. H. S. Nickerson, V.C., remarked that unless medical officers of health were fully informed as to the probable number of casualties, and the kind of casualties, they obviously would not be in a position to deal with the problem.

The paper Routine Pathological Examination as Applied to Physiologically Inefficient Aviators was read by Wing Commander H. E. Whittingham, Director of Pathology for the Royal Air Force. He said that flying might strain the physiological functions of the body in various ways; the general alertness required used up much nervous energy; high altitudes accelerated the rate of breathing and the circulation producing changes in the whole metabolism. Pathology was physiology gone wrong. The flying personnel were systematically kept under physiological observation. In this country the Central Medical Board at Hampstead dealt with any conditions which could not be remedied at a station and also with all aviation candidates. If the Board decided that any case was physiologically inefficient or doubtful, specialists performed further tests to detect, if possible, the cause and to aid in the assessment of the probable duration of the disability.

SECTION OF INDUSTRIAL HYGIENE.

In this Section excellent papers on Smoke Prevention were read by Dr. C. S. Thomson (M.O.H. Deptford), and Mrs. M. H. Cloudesley Brereton and Mr. T. M. Horobin; Dr. C. O. Stallybrass (Asst. M.O.H. Liverpool) spoke on Occupational Cancer.

Miss Gertrude Smith (Bootle), speaking on the routine of welfare work in the factory, contrasted the excellent arrangements made for the work girls with those made for health visitors.

SECTION OF TROPICAL DISEASES.

This Section was presided over by Dr. Andrew Balfour. His presidential address was on the term "tropical," and he also gave to the Section a demonstration of the Rockefeller malaria film.

Sir Leonard Rogers, in the course of a paper on Disease Incidence and Climate in India, spoke of India as an ideal field for studying the influence of climate on disease. He referred to the close relationship between high rainfall and high leprosy incidence, and humid monsoon winds and high phthisis rates; and he indicated chills as the most important cause of malaria. Marked falls in the number of small-pox cases were seen when high degrees of humidity occurred during the monsoon months. In years of failure of the rains the decline was much less during the monsoon months, and consequently the rise which the succeeding cold, dry weather invariably brought, started from a higher level and an epidemic resulted. In most parts of India the principal small-pox epidemics could thus be foreseen, in future, in time to allow of special efforts to push vaccination in the affected areas.

General Gouzien, of the French Colonial medical administration, gave an interesting account of the measures adopted to combat sleeping sickness in the French colonies. The work was very thoroughly organised throughout an enormous area; villages were even moved to bring them on the lines of communication. The success attending the French system of training natives to take part in the laboratory work aroused the admiration of Sir William Leishman.

SECTION OF PATHOLOGY, BIOCHEMISTRY, AND BACTERIOLOGY.

The outstanding features of this Section were the presidential addresses and two papers dealing with vitamins. Prof. E. C. C. Baly (Liverpool) in his address dealt with the anabolism of the simpler compounds and the construction of proteins by plants. The light of the sun does more than photosynthesis; it maintains the compounds formed in a state of high energy so that plants can carry out their vital functions. The healthier a plant the higher is its food value; this depends upon the plant's high vital energy. He held that vitamins were not specific chemical compounds, but were substances normally present in food in a state of high chemical energy.

WOMEN AND THE PUBLIC HEALTH.

The opening address was delivered by Miss Margaret Hardy, J.P.; the afternoon session had as Chairman Mrs. Cooper Rawson.

In the discussion on Heliotherapy and Actinotherapy Sir Henry Gauvain stated that for heliotherapy we wanted intermittent exposure to sunlight; he questioned if sunlight by the sea were not as good as the much-vaunted Alpine sun. Dr. Leonard Hill, speaking of ultra-violet rays produced by lamps, said that so far as he could find out real and artificial sunlight produced the same effect.

On the second day the subject of birth control was discussed by Dr. Mary Scharlieb, Dr. Norman Haire, and Dr. M. M. Chadburn. The discussion has been fully reported in the lay press, as was also the sermon preached on the same subject by the Bishop of Birmingham, F.R.S.

A model popular lecture on the Plague in Britain in Past Centuries was delivered by Lieut.-Col. W. P. MacArthur to a large and representative audience on the Saturday evening, May 30th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Transplantation.

THE principal subject discussed by the recent German Surgical Congress concerned transplantation and its results. The discussion was introduced by a paper read by Prof. Lexer, of Freiburg. He stated that such homoplastic transplantation of entire organs—pancreas, thyroid gland, hypophysis, kidney, and suprarenal capsule—as had been tried had not had any lasting result. Bier and Carell had successfully transplanted entire extremities in dogs, but Prof. Lexer had not been so successful himself; his best case was that of a transplanted femur, but the leg became necrotic after 24 days, although the circulation had apparently been re-established. Concerning individual organs, he said that homoplastic material had often been a failure when autoplastic material was not attainable. Transplantation of epidermis and of skin should be performed more frequently as there excellent results were obtained, the former being successful on an average in 90 per cent. of cases, the latter in 75 per cent. Transplantation of bones with periosteum and bone-marrow also gave good results. The restoration of the function required rather a long time, at least one year, and three years when the naked bone without periosteum had been transplanted. It was essential not to strain the extremity too early. In bones transplantation of homoplastic material was sometimes successful, whilst heteroplastic material produced marked irritation with suppuration leading to a necrosis of the transplanted bone. Transplantation of joints might be successful under the same conditions, but homoplastic material led to healing only without giving motility to the joint. Cartilages were well suited for transplantation as they had a marked tendency to adhere to the substratum. Homoplastic material might be dispensed with, as ample material was at the disposition of the surgeon in the cartilages of the ribs and of the ear. Previous to a transplantation of a tendon, the joints concerned must first be made movable, if necessary by a plastic operation. To replace a tendon a strip of periosteum or of the fascia lata might also be taken. To avoid adhesion Prof. Lexer recommended the implantation of fat. He had performed 330 operations for mobilisation of joints in this way, and on one occasion used a lipoma from an old woman for this purpose. A drawback was, however, that hæmorrhage might occur in fatty substance. Fat was also useful in filling cavities of bones and defects of the dura mater. In six of 17 cases of defects of the dura mater filled with fat the epileptic fits had ceased. In transplantation of vessels the homoplastic method was uncertain, but autoplastic material taken from the vena saphena gave good results. It was not yet possible, he said, to give a definite judgment on transplantation of nerves, while free transplantation of muscles had always been a failure.

University of Münster.

The number of universities in Germany is still increasing. Shortly before the war new universities were opened at Hamburg and Frankfort. As a result of the war Germany has lost Strasbourg, one of its most important universities where the medical faculty has been especially flourishing, but Cologne has been opened since with its great and well-equipped hospitals. A recent addition to the centres of medical learning was the completion of the University of Münster, the capital of Westphalia, one of the oldest cities of Germany. The University of Münster had consisted for a century of a philosophical and theological faculty only, but shortly before the war a medical faculty was added which was at first rather incomplete, giving opportunity for the study of the preliminary branches of anatomy, physiology, and natural sciences only, and not for clinical medicine. Now the faculty has become complete, a series of new clinics has been built and these were lately inaugurated in the presence of many representatives of the Government, other medical faculties, and of the medical profession. The new premises, though constructed in a plain architectural style to save superfluous expenses, are, nevertheless, furnished with modern apparatus and laboratories. Forty-five students have already matriculated for clinical study. A number of "honorary citizenships" of the university were conferred at the opening ceremony on prominent medical men.

Alcoholism in Germany.

One of the few good effects of the war was the decrease of alcoholism in Germany. Spirits could not be purchased at all or only at a prohibitive price. The result was that the number of mental diseases due to alcoholism decreased greatly. The lunatic asylums of the city of Berlin, for example, became sparsely inhabited and a new asylum, which was to be opened at the end of 1914, became superfluous, so that its premises could be dedicated to other purposes. Similar examples occurred throughout Germany. According to a statistical record of the clinic for mental diseases of Breslau University, the proportion of mental diseases due to the abuse of spirits was estimated before the war at not less than 40 per cent., which decreased in war-time to 7 per cent. After the war, in 1919, 100 new spirit licences were granted, with the result that the proportion increased in that year to 15 per cent., in 1920 to 17·3 per cent., and in 1921 to 32 per cent. In 1922 there was again a decrease to 31 per cent., and in 1923 a still further fall to 22 per cent. The reason of that decrease was that the spirits became in the latter year much more expensive owing to heavy duties and that by a by-law in Breslau the sale of spirits was prohibited from 9 P.M. to 8 A.M. In other cities there is a similar state of things, as shown by reports from the clinics for mental diseases of the Universities of Munich, Cologne, and Frankfort. Undoubtedly the nuisance of alcoholism requires energetic measures, but radical prohibition as in the United States would probably never meet with the approval of legislation in this country. The adherents of "No Prohibition" are very busy and even sometimes do not refrain from violence, as shown by an incident which happened lately in Berlin. The Church Anti-Alcohol Society had convoked a meeting in Trinity Church where an address was read by a clergyman. He was frequently interrupted by a noisy mob who even tried to assault him, so that the police had to enter the church to protect him and the congregation. It must, however, be stated that the indiscriminate drinking of beer has much decreased in academical circles. The German student who formerly used to spend a good deal of his time in "Kneipen" has largely abandoned that custom and sports of every kind now widely fill the hours formerly spent in smoky and badly ventilated restaurants.

Gonorrhœal Arthritis in Infants.

Dr. Knauer, of Breslau, reports in the *Zeitschrift für Kinderheilkunde* a case of gonorrhœal arthritis in a female infant, aged 7 days, whose parents were both infected with gonorrhœa. On the seventh day after birth reddening and swelling developed on the left prepatellar bursa and three days later the great toe also became affected. On aspirating the bursa purulent fluid was evacuated containing gonococci. The swelling of the bursa and of the toe gradually diminished and the infant was completely restored to health. No fever had occurred. The portal of infection could not be determined as neither the conjunctiva nor the vulva of the infant was affected; possibly the gonococci entered through the umbilical wound or through the skin, where some small pustules were present. Two other cases were reported by Dr. Fischer. The shoulder-joint was affected in both cases. On aspiration gonococci were found in the one case, whilst in the other the culture was sterile.

Gas-masks against the "Haff Disease."

The so-called Haff disease, described some time ago in these columns,[1] which by thorough investigation was traced to poisoning by arseniuretted hydrogen, has not yet been entirely eradicated, although the waste waters from the factories, whence the disease originated, were partly diverted from the Haff. In the month of May 20 new cases occurred not only among fishermen but also among persons working near the Haff. The Government has therefore provided the fishermen with gas-masks similar to those used during the war, but some of the men have declined to wear them, on the grounds that they interfere with their work. It is to be hoped that, by and by, the more conservative fishermen will get accustomed to the mask, which does give effective protection.

First-Aid Lessons by Films.

The Red Cross has arranged for an instructive film to be shown to the public in the leading kinemas. The film was lately demonstrated privately to a selected audience, including many medical men. In the first part the aid to be given in cases of wounds was shown, where special stress was laid on the prevention of infection in wounds and where the application of the "Verbandpäckchen" (first-aid packet) was demonstrated. The second part dealt with first-aid in fractures and dislocations, showing the use of improvised splints. The evil effects which might result from attempts by the uninitiated to set a fracture or reduce a dislocation were demonstrated and the necessity of calling a surgeon was emphasised. The third part dealt with first-aid to be given to the apparently drowned, in cases of frost-bite and sunstroke, and in other accidents of that kind. The pictures were well produced and easily intelligible to a lay public.

Public Health Services.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

THE following are some of the health statistics for 1924 of a group of districts of varying local government status:—

Name of district.	Mid-year population (R.-G.).	Birth-rate.	Death-rates per 1000 of the population.				Death-rates per 1000 births.		
			All causes.	Tuberculosis.	Cancer.	Resp. diseases with influenza.	Neonatal mortality.	Infant mortality.	Maternal mort. from childbirth.
Southport C.B.	73,650	12·9	13·7	1·07	1·4	2·6	31	63	1·1
Bilston U.D. ..	30,310	26·5	12·6	0·72	0·9	4·4	39	97	0·0
Radcliffe U.D.	25,290	15·4	14·1	0·80	1·1	2·8	51	102	5·1
Barnstaple R.D.	18,520	14·2	12·3	0·75	1·6	1·8	—*	42	3·8
Adwick-le-Street U.D.	14,750	33·4	8·6	0·74	0·5	1·6	—*	71	6·1
Bentley-with Arksey U.D.	14,430	24·6	8·6	0·41	0·3	2·3	—*	93	8·4

C.B. = County borough. U.D. = Urban district.
R.D. = Rural district. —* = Information not given in the report.

Southport.

Dr. G. C. Barnes reports that the hours of sunshine in Southport during 1924 were 1410·4, and that nearly the whole of the large shortage of sunshine occurred during the summer half-year of April to September. The population of Southport is almost entirely residential, with the necessary auxiliary occupations. There is one important motor works. The notification of tuberculosis is still unsatisfactory, and the health committee have resolved that cases of failure to notify shall be taken before the magistrates, in accordance with the regulations of 1925. The arrangements for the treatment of surgical tuberculosis leave much to be desired, but Dr. Barnes points out the wide distinction between pulmonary and surgical tuberculosis from the point of view of the sanitary authority, in that the latter, while causing grave personal disability and loss, is generally regarded as non-infective. He suggests, therefore, that surgical tuberculosis should in principle be dealt with by voluntary institutions. One out of ten samples of milk produced inside the borough was found to be tuberculous, and seven out of 84 outside samples. The four samples of "certified milk" submitted to bacteriological examination proved to be well above the standard. The council of Southport have protested four times against the continued suspension of the Tuberculosis Order of 1914. 309 new houses have been completed by private enterprise during the year. The high cost of labour and materials, however, interferes both with the construction of new and the repair of old houses. New houses are still needed for manual workers and other persons with small means. Southport is in an exceptional position, seeing that the deaths exceeded the births by about 30. Presumably the new houses partly provide for new residents.

Bilston.

Dr. T. Ridley Bailey reports that the year under review has been one of marked progress. A scheme for the substitution of 910 water-closets for privies has been successfully carried out. New storm-water and detritus tanks have been provided at the sewage disposal works. The sewering of the Moxley area has been completed, and every house in that district provided with water-carriage. "The chief blot is, of course, the state of overcrowding." Nevertheless, Dr. Bailey congratulates the council on their efforts. Since 1919 the council have erected 649 houses, and at the present time they have under consideration a scheme for the erection of 492 houses, and another scheme under private enterprise for 70 more. At the 1911 Census the number of persons per house was 4·96. At the 1921 Census the number was 4·25, and it is estimated that to-day the number of persons per house is 5. Recent efforts have, therefore, not provided for the annual increase in the population. "Some of the conditions found by the inspector during his visit were appalling." No proceedings can be taken for overcrowding. The only solution of the problem is the erection of more dwellings, and, says Dr. Bailey, "any man or any body of men, under whatever pretext, preventing or delaying this work is an enemy to the State." The health visitor's report shows that of 728 babies 662 were breast-fed, 28 partly breast-fed, 3 received breast milk and solid food, and 35 were artificially fed at the time of the first visit; also that 235 of the babies had a "dummy" and only 64 were provided with a separate cot. The report under review is the fortieth which Dr. Bailey has made during his term of service.

Radcliffe.

Dr. John M. Gibson comments on the increase in infant mortality from 74 in 1923 to 102 in 1924, and states that most of the Lancashire districts also show a marked increase. Infant mortality has always been very high in Radcliffe, as shown in a table giving the mortality for every fifth year. The figures are 222 for 1895, 198 for 1900, 155 for 1905, 148 for 1910, 145 for 1915, 115 for 1920, and 102 for 1924. As in most districts, there has been no decline among the deaths during the first week and month of life. The opening of a maternity home in the district is urgently needed, especially in these times of overcrowding. Dr. Gibson points out that the Bealey Memorial Convalescent Hospital (eight beds) is in danger of being closed owing to lack of funds, and he suggests that this building is admirably adapted for use as a maternity home.

[1] THE LANCET, 1925, i., 566.

An outbreak of encephalitis lethargica has caused considerable anxiety. One case of this disease was notified in 1920, and none in the three subsequent years. During 1924 11 cases were notified, none of which ended fatally. One of the survivors has left the district, and her subsequent history is unknown. Of the remainder, only four have made complete recoveries. Three manage to perform their ordinary duties, and three are physically unfit for any work 12 months after the attack. The 11 cases seemed to have no relationship to one another, and in no instance was there a second case in the household. During the last quarter of the year there was an outbreak of measles, numbering about 700 cases, with seven deaths, all under the age of 5. Dr. Gibson suggests that it would be advantageous if measles in children under 5 years of age were made notifiable. For many years the opening of a maternity and child welfare centre has been under discussion. When the report was issued this event was expected to take place on April 2nd, 1925. The building is an excellent one for the purpose, having large bright rooms and being surrounded by a public park. Since October, 1921, a scheme has been in force for the conversion of privies into water-closets. The number of privies, which was 1863 in 1921, has been reduced to 880 in 1924.

During the year particular attention has been given to the purity of the milk sold in the district. In commenting on "purity" tests Dr. Gibson points out the unsatisfactory nature of the "deposit" test, as every cow-keeper was able to forestall this test by providing a fine sieve to strain out the dirt. The bacterial count gives much more satisfactory results. No milk purveyors in the district have applied for licences to sell "graded" milk, but a fairly successful effort has been made to get the "Grade A" standard of purity made general. Of 29 samples of milk examined 27 reached the Grade A standard for bacterial count, and 13 for the absence of *Bacillus coli*. Only four samples were examined for the presence of tubercle, and one of these was found to be infected. In addition to the local supply of bread, a considerable amount is received from neighbouring towns, and a large proportion is wrapped in waxed paper. There are nine slaughter-houses in the district, eight registered and one licensed, and the new meat regulations, with the provision for three hours' notice of the intention to slaughter, will facilitate inspection "enormously." Dr. Gibson refers to the important conference on smoke abatement for the area round Manchester held during the year, and attended by representatives from 78 authorities.

A valuable series of hints to boiler attendants compiled by Inspector Clinch, of Halifax, have been circulated to all the factory owners in the district. As regards housing, Dr. Gibson reports that 96 houses have been added during the year, that 38 more are in course of erection, and that plans have been prepared for a further 50, and that when these have been completed the urgent demand for houses will have been met.

Barnstaple.

Dr. J. R. Harper reports one case of encephalitis lethargica at Combe Martin which recovered, and a fatal case in the North Devon Infirmary admitted from Wrafton, outside the district. During the early part of the year there was a widespread outbreak of influenza, more severe in type than that of the three previous years. Nine deaths resulted. The abnormal rains of 1924 severely taxed the drains and sewers of the district, and many complaints of flooding were received from Braunton. Most of the water-supplies in the villages are excellent. Combe Martin has now in hand a scheme for an adequate public supply.

Adwick-le-Street.

Dr. A. B. Dunne points out a discrepancy with regard to the deaths from childbirth coming to his knowledge and the figures supplied by the Registrar-General, the numbers being five and three respectively, equivalent on these small numbers to the high death-rate of 10 or 6 per 1000 births. Twenty-one cases of small-pox were notified with no deaths.

Bentley-with-Arksey.

Dr. Dunne also reports for this district, in which there were no cases of small-pox notified. In both districts the use of vans as permanent dwellings is becoming very common, and hitherto, unless a nuisance could be proved, the sanitary authority has had no power if the vans were on wheels. This has now been altered by the judgment delivered by the Lord Chief Justice in the case of Keeling *v.* Wirral R.D.C., by which such vans are temporary buildings and subject to the by-laws of the sanitary authority in districts where Section 27 of the Public Health Acts (Amendment) Act, 1907, is in force. Dr. Dunne returns to the question of the smoke nuisance, and trusts that the public will take sufficient interest in the matter to ensure the passing of the proposed Smoke Abatement Act.

SCHOOL MEDICAL SERVICE.

STATISTICS from three school medical reports for 1924 are given in the following table:—

Name of district.	No. on roll.	Av. elem. school attendance.	No. of routine children examined.	Special examinations or inspections.	Percentage of children found on routine examination requiring treatment.‡
Torquay	3000*	—†	1113	4234	15·5
Eastbourne ..	4883	4478	1573	8467	18·6
Leamington Spa	3347	3018	1046	1348	8·8

* Approximately. † Not given.
‡ Excluding uncleanliness and dental defects.

Torquay.

The school medical officer, Dr. T. Dunlop, on introducing the assistant S.M.O.'s (Dr. J. V. A. Simpson) report, remarks on the importance of his special investigations. Dr. Simpson carries out the treatment at the welfare centre and so is able to follow up the health of many children from birth to school-leaving age, and instances several cases of incipient defects—e.g., tonsils, squint—satisfactorily treated in pre-school children, ensuring that such children may start school-life without handicap. Dr. D. Wilson, the ophthalmic surgeon, congratulates the district on the close coöperation between the welfare centre, the school medical service, and the parents as is shown by the increasing numbers of young infants brought to him for treatment.

In his account of the open-air school, Dr. Simpson's enthusiasm is justified by the results obtained. The many advantages are clearly outlined in the advance in health and morale of the debilitated child and in the financial gain to the community from turning out healthy youngsters in place of confirmed invalids. Torquay is fortunate in the possession of open-air accommodation for 3 per cent. of its whole school population. Dr. Simpson, in his special investigation at the open-air school, reasons out the difficulties of precise definition of "nutrition" for obtaining standards for comparison, and wide references are made to various authorities. He finally adopts the Baldwin-Wood method and counts as malnourished all below 7 per cent. of the standard weight for age, sex, and height; on applying this to the records of 148 children extending over a period of four and a half years, he finds that one out of every two children were below the limit on admission as against one out of every five on leaving. He further shows that the children remaining malnourished increase, on the average, more in height than do the others.

From his results it might be inferred that the consistently malnourished child has a constitutional bias

which remains true to type in spite of a favourable environment and is in a class quite distinct from the malnourishment resulting from illness, bad feeding and housing. He disarms criticism by himself pointing out the paucity of data, and using an American standard for English children. The ventilation of the schools has also engaged Dr. Simpson's attention. He has employed Leonard Hill's kata-thermometer freely and tabulated the results of his experiments. The charts given show strikingly high readings of both dry and wet katas in the open-air sheds which contrast strongly with the low readings in some of the schools. The findings generally were in conformity with the sensory impressions obtained. A chart showing the incidence of catarrhal conditions at the time when these readings were taken would have been of interest.

Eastbourne.

Eastbourne has a relatively small number of children in elementary schools, but the percentage of attendance is fairly high—nearly 92 per cent. The percentage of defects is close to the average for the whole country. It is noted that visual defects are the only conditions which have not been proportionately reduced, and an apparent increase of such defects has been found in other parts of the country. The only condition likely to be affected is myopia, and even here, says Dr. J. Kerr in his recent standard work on "School Vision," "it is quite impossible to say how much school contributes quantitatively to the aggravation of the condition of myopia, possibly 50 or 60 per cent. would be a full estimate, but these eyes are not originally made myopic by school"—i.e., school conditions are not the primary cause. Those familiar with the conditions in the schools of to-day will not readily believe that such conditions are responsible.

The physique of the children seems to be distinctly good. Dr. W. G. Willoughby points out that they are above the standard heights at all ages and above the standard weights at all ages except in the 12-year old group. The Eastbourne children are generally taller and heavier than they were in 1908, the difference in height often amounting to 1½ inches or more and in weight to 3 lb. or more. It is suggested that the improvement "cannot be dissociated from the child welfare work, since it is particularly marked in the younger children." The attendance of parents at routine inspections was poor, 48·4 per cent., and there are other indications that they are not fully coöperating—e.g., there were 304 cases who failed to attend the dental clinic this year; out of these, it is true, 108 promised to obtain private treatment, but experience shows that the value of such a promise is not always good.

The arrangements for treatment are fairly extensive, and there are nine different clinics, including an unofficial and voluntary orthopædic clinic which we hope will become permanent. There is a special mental deficiency school and an open-air school, where much attention is given to the more serious cases of malnutrition.

Leamington Spa.

Dr. W. L. M. Goldie's report, for the most part, consists of a series of statistical tables. There are several points of interest which could have been elaborated to the benefit both of the medical practitioner and the layman. Leamington would seem to be fortunate in its small incidence of infectious disease, and no school closures were necessary on account of infectious outbreaks. The percentage of vaccinated children in the elementary schools has considerably diminished; 65 per cent. of these children are unvaccinated. It is interesting to note that as the children attain the leaving age there is a progressive increase in the number of vaccinations. In the secondary schools there is a much higher percentage of children vaccinated; only 32 per cent. of boys and 33 per cent. of girls are unvaccinated. The number of defects found at routine examinations is surprisingly small.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 30TH, 1925.

Notifications.—The following cases of infectious disease were notified during the week, namely:—Small-pox, 88; scarlet fever, 1572; diphtheria, 697; enteric fever, 60; pneumonia, 1007; puerperal fever, 52; cerebro-spinal fever, 13; acute poliomyelitis, 4; encephalitis lethargica, 71; dysentery, 2; ophthalmia neonatorum, 118. There were no cases of cholera, plague, or typhus fever notified during the week. The number of small-pox cases showed a decrease of 48 from the number for the preceding week.

Deaths.—In the aggregate of great towns, including London, there were 2 deaths from enteric fever, 76 from measles, 14 from scarlet fever, 71 from whooping-cough, 27 from diphtheria, and 48 from influenza. In London itself the deaths from influenza numbered 6, from whooping-cough 10, and from diphtheria 8.

The Services.

ROYAL ARMY MEDICAL CORPS.

Capt. M. Ferguson to be temp. Capt., and relinquishes the rank of Capt.

Lt. H. I. Clapperton, late Ind. Army, to be temp. Lt. whilst employed as a Dental Surg.

W. G. Bradbeer to be temp. Lt. whilst empld. as a Dental Surg.

MILITIA.

Capts. to be Majs.: F. G. Foster, W. E. Elliot, W. W. Wagstaffe, C. Atkinson, H. K. Ward, and H. W. Maltby.

TERRITORIAL ARMY.

Maj. D. Dougal to be Lt.-Col. and to command the 12th (2nd Western) General Hospital, vice Lt.-Col. J. H. Ray, vacated on completion of tenure.

ROYAL AIR FORCE.

R. F. G. Dickson is granted a short service commission as Flying Officer for three years on the active list.

Flight Lt. J. A. Quin is transferred to the Reserve, Class D2.

INDIAN MEDICAL SERVICE.

Lt.-Col. H. Boulton to be Col.

Capt. Jyotish Chandra De to be Maj.

Lt. W. H. Critien to be Capt.

The King has approved the relinquishment of his temporary commission by Lt. Ragunath Balkerishna Chandrachud.

Col. A. A. Gibbs, I.M.S., has been appt. Hon. Physician to the King, Ind. Mil. Forces, vice Maj.-Gen. J. Jackson, I.M.S. (ret.).

Col. E. L. Perry, I.M.S., has been appt. Hon. Surgeon to the King, Ind. Mil. Forces, vice Col. F. Wall, I.M.S. (ret.).

OVERSEAS NURSES' MEMORIAL.—As a memorial to the nurses of the Overseas Nursing Service who died in the war, a nurses' home is to be built in connexion with the Elizabeth Garrett Anderson Hospital. In aid of the appeal fund Lady Burnham recently opened a replica of a modern operation theatre at the British Empire Exhibition. The Memorial Fund Committee includes the High Commissioners for Newfoundland, Canada, Australia, and New Zealand. The Overseas Nurses' Memorial Exhibit will be found in Bay 16, Avenue 6, in the Palace of Housing and Transport at the British Empire Exhibition, Wembley. Souvenir bricks can be purchased for 1s. each. Donations may be addressed to Lady Dufferin and Ava at the hospital, 144, Euston-road, London, N.W. 1.

LONDON HOSPITAL.—Mr. Bernhard Barron has given £10,000 for the erection of a new pathological department. The present department is entirely inadequate—five or six men are doing difficult research work in one room. A gift of a similar amount has been made by Mr. and Mrs. Williams for the establishment of an Owen Williams Research Fund, named after their son, who died in 1914. The contract, amounting to nearly £40,000, for the erection of the new hostel for resident doctors has now been let, and the consultative children's department is to be enlarged and improved, a new member being appointed to the honorary staff as a specialist in children's diseases. When this has been done it will be a consultative centre for all the children's welfare departments in the East End. There are still 101 closed beds in the hospital.

INTER-STATE POST-GRADUATE ASSEMBLY OF AMERICA.

VISIT TO LONDON, JUNE 2ND–6TH, 1925.

President—H.R.H. THE DUKE OF YORK, K.G.

ON Thursday, June 4th, the series of brief introductory lectures was continued in the morning at Wigmore Hall.

OPERATION IN GASTRIC AND DUODENAL ULCER.

BY JAMES SHERREN, C.B.E., F.R.C.S.

IT is well for surgeons to pause from time to time and ask themselves why they continue to treat certain conditions by operation. Are they convinced from their results that this procedure is the best in the interests of the patient and that it is the quickest, safest, and most efficient method of relief? This is particularly needful when dealing with disease in the abdomen. In acute abdominal catastrophes there can be no doubt that operation at the earliest moment satisfies these criteria. But I should not like to say that it is so with all abdominal disease or so-called disease. To take common examples, I feel sure that among those with the widest experience there is much less operating for such conditions as "chronic appendicitis" and much less removal of the appendix on the chance that it may relieve obscure abdominal symptoms. I am not among those who say this disease is a myth, but it is not as common as was at one time supposed. There is, however, no operation that will give greater relief than removal of the appendix when its disease is causing symptoms. But this is a difficult subject. I would also mention the diminution in the number of cases operated on for the relief of "intestinal stasis." We have learnt by our failures, and also by those of others. The percentage of cure in many patients with these labels is too low.

When Should We Operate?

I intend to devote the short time at my disposal to considering chronic ulcer of the stomach and duodenum along these lines. If we think that operation satisfies what I have just laid down, then, whether the operations we are doing meet all the requirements—that is if they bring about cure with a minimum of risk—this question can only be answered satisfactorily by those who have a systematised follow-through of patients. This I have had from the first in dealing with this class of case and see or hear from all at intervals during the first year, yearly up to three years, then in alternate years. In this way it is possible to compare the result obtained by various methods and to improve these where necessary.

The problems of treatment of duodenal are different from those of chronic gastric ulcer, but I would emphasise as common to both—no surgeon should recommend operation in the absence of complications until medical treatment has failed, and this medical treatment should be directed not only to the internal lesion, which is an end-result, but towards dealing radically with its cause, so far as we can see at present any infective focus that may be met with. I particularly allude to infection from teeth, naso-pharynx, and tonsils. How common it is to have patients sent to us after suffering for years from symptoms suggesting ulcer and find septic conditions in association with the teeth. I would, however, impress on you that dental treatment to be effective must be carried out in the early months of the disease, and that after the lesion is once established removal of the focus will not cure it. But it must always be done prior to operation, not only to minimise the operative risk, but to prevent the development of fresh ulcer in the region of the anastomosis.

We must all have known delay in submitting the patient to operation lead to that procedure being carried out too late because carcinoma has supervened or lethal hæmorrhage; this delay is sometimes due to an undue reliance on the efficacy of dental extraction and valuable time lost. Sometimes the patient is X rayed with a negative result; in others this is not carried out, but a definite opinion is given that removal of all his teeth will cure his condition. This is done, the patient waits for the promised cure only to find that the carcinoma has become inoperable or some other lethal complication ensues.

If efficient medical treatment fails to cure or relapse occurs we should operate in both conditions. I am firmly convinced of the inadequacy of medical measures and of the impossibility of it being carried out for more than one course in the majority of patients with whom we have to deal. If the patient with duodenal ulcer is willing to put up with the discomfort of the attacks and can cut them short, as is usually the case, by rest in bed for 48 hours and light diet, should we urge operation? My answer is, most emphatically, yes. The more I see of cases of duodenal ulcer, the more dangerous do I consider the condition. We should not wait until signs of pyloric stenosis supervene—if the patient lives so long by escaping the twin dangers of hæmorrhage and perforation.

What Operation Should We Do?

In the hands of a surgeon used to abdominal work operative is the safest form of treatment. But what operation? It is rarely that we take up a surgical journal without seeing new operations urged for the cure of duodenal ulcer, many of them procedures that must, in average hands, carry with them a high death-rate, and some of which remove large portions of the stomach, a mutilating procedure, and to me a repellent one. I allude to duodenectomy with its technical difficulties and to wide partial gastrectomies. Neither of these operations is a guarantee against secondary ulceration; I have known it occur after both, and both carry a death-rate at least treble that of simpler, and I consider as efficient procedures.

Gastro-jejunostomy will bring about the healing of all duodenal ulcers except large posterior ones adherent to and eroding the pancreas, and even these sometimes heal. The ulcer does not recur if the new opening remains patent, which it does unless there is marginal ulceration. In a large experience of second operations, on patients of my own and other surgeons, I have never found the original duodenal ulcer unhealed except in the case I have just mentioned. I consider that we have solved the question of what will bring about healing of the original ulcer; our problem is to prevent ulceration in the region of the anastomosis and our whole efforts should be devoted to this problem, which is not insoluble, while our medical and pathological colleagues are busily engaged in discovering means of preventing the occurrence of chronic ulcer and so rendering surgery unnecessary.

But to bring about healing the gastro-jejunostomy must be efficient. It should be posterior, vertical, extending from the lesser to the greater curvature, and situated on a line just to the right of the cardiac orifice, the suture material used being catgut. I cannot wonder at dissatisfaction being expressed with the operation, carried out as I have seen it on reopening the abdomen, small, horizontal, and near the pylorus. If by reason of obliteration of the lesser sac by adhesions it is unwise and impossible to use the posterior surface of the stomach, I bring the jejunum without a loop through the transverse mesocolon and gastrocolic omentum to the anterior surface of the stomach. In those cases in which the mesocolon is shrunken and adherent or loaded with fat it may be unwise to do the usual trans-mesocolic operation. We should remember that post-operative vomiting is the result of obstruction to the anastomosis or its limbs. We should avoid any manipulations

here likely to produce adhesions or narrowing of the opening in the mesocolon. In these cases I do an antecolic short loop operation to the posterior surface of the stomach. I take the jejunum just beyond the flexure, bring it in front of the transverse colon, and unite it vertically to the posterior surface of the stomach. Both these operations have given results nearly as good as the ideal one.

In the uncomplicated case I do not consider the ulcer itself should be treated. In ulcers that have perforated into the peritoneal cavity or in which the gall-bladder closes the perforation, I suture it vertically so as not to narrow the pylorus. In recent hæmorrhage I destroy the ulcer with the cautery and suture the opening in a similar manner. I have entirely given up infolding the ulcer; it is almost impossible to do this without narrowing the pylorus. The ulcer heals readily without it and I look on pyloric exclusion as a *predisposing* cause of jejunal ulceration, as it prevents efficient lowering of gastric acidity in many instances. The whole abdomen should be searched for other disease, particularly in the gall-bladder and appendix.

This operation in my hands brings about *cure* in at least 90 per cent. of the cases with a death-rate of less than 1 per cent. Similar results are obtained in your clinics. Is it therefore worth while to carry out extensive procedures when a simple operation brings about results such as these? Of the seven or eight that cannot be called cures, one, perhaps two, may develop secondary ulcers, the remainder may have vague complaints of discomfort, such as we all see even after partial gastrectomy.

In my experience after operation on these lines, if the patient remains well for two years he does not develop secondary ulceration. But the patient must have remained well—that is, there must have been no complaint of pain or discomfort after food. He must have had perfect health. These are the 90 per cent. who do not develop symptoms. It follows, therefore, that the statement that I have so frequently read, that the longer after operation these cases are reviewed the less numerous the cures, is incorrect. In the days in which silk and thread were used it is conceivable that symptoms due to secondary ulceration might appear much later when the suture was working its way out.

My experience of gastro-duodenostomy does not lead me to adopt it as a routine. I only employ it in rare instances where there is marked atony of the stomach together with a dilated duodenum in patients whose gastric acidity is not excessive. In my hands it has not brought about what I consider to be a sufficient lowering of gastric acidity and it does not protect against secondary ulceration. As a result of my experience I consider the surgical treatment of chronic duodenal ulcer not only the safest, but the quickest and most efficient method of cure.

With regard to the choice of operation in chronic gastric ulcer, we have here another danger to face, that of the development of carcinoma, and I consider it quite legitimate to mention this when discussing operation with the patient, so that we have additional reason for holding operation the safest procedure. It is, of course, impossible to be dogmatic, but I have found that in at least 25 per cent. of my specimens of carcinoma of the stomach removed by operation there was evidence of preceding simple chronic ulcer. Among specimens removed by partial gastrectomy as simple ulcer without definite evidence of malignancy, but were removed on account of their size, carcimona was discovered in the edge in 6 per cent. I am convinced that chronic gastric ulcer is a predisposing cause of carcinoma.

What I have said about operation for duodenal ulcer applies here also; gastro-jejunostomy will bring about the healing of all free simple ulcers when it is done to their cardiac side, but it must be done here, if it cannot the lesion is not suitable for treatment by this method, but should be dealt with by partial gastrectomy. I have reoperated on many patients in whom gastro-jejunostomy had failed to bring about a cure and found the new opening had been made distal to the ulcer. Gastro-jejunostomy done in this way will never cure gastric ulcer.

Small mobile ulcers can be treated by gastro-jejunostomy alone, or in addition destroyed by the cautery. Large indurated ulcers, those eroding the pancreas or liver, should be treated by partial gastrectomy, the former because of the impossibility of saying if they are simple or have become malignant, the latter because we know that many of these do not entirely heal as the result of gastro-jejunostomy alone. I have entirely given up excision combined with gastro-jejunostomy. It has, in my opinion, no advantages—if I think the ulcer should be destroyed I do it with a cautery. If it is too high for gastro-jejunostomy to be carried out to its cardiac side, excision and gastro-jejunostomy is useless; the ulcer recurs in the scar which will be on the cardiac side of the new opening.

I would plead that gastric ulcer be not treated on stereotyped lines—every case by partial gastrectomy—successful operation though it may be, but one that must by its very nature have a higher death-rate than gastro-jejunostomy and may, after years, have a deleterious effect. Let us treat them with an open mind, remembering the danger of malignancy. I am convinced that a simple chronic gastric ulcer heals as readily after gastro-jejunostomy as does duodenal ulcer. It may be said that there is a danger of carcinoma developing in the scar of a chronic gastric ulcer. If this be so, which I very much doubt, it is a very remote one, and I am sure the risk is more than counterbalanced by the increased death-rate of partial gastrectomy—more would die from the operation than from late malignant development.

In an extensive experience of gastric operations I have never seen the late development of carcinoma after gastro-jejunostomy had been carried out for a small mobile ulcer on the lesser curvature. The cases in which I have seen it, and they are rare, were in those which I now treat by partial gastrectomy and in cases in which for some reason although this was indicated it could not be carried out.

Conclusion.

I would urge, as far as possible, conservative treatment of lesions, believing that any additional cures that might be obtained, which I personally deny—as all cases of partial gastrectomy do not regain perfect health—would be more than wiped out by the greatly increased death-rate. I do not consider that the late results of partial gastrectomy surpass those of gastro-jejunostomy. Minor complaints, occasional discomfort, and vomiting are met with in 7 or 8 per cent. of these. But gastro-jejunostomy is an operation perhaps above all others that needs to be carried out with thought and its site carefully chosen. Done in the way I have described, it is an operation that seldom disappoints either the patient or the surgeon. It is the result of my experience that operation is still the line of treatment to be advocated with these diseases.

CANCER OF THE LARYNX.

[ABRIDGED.]

BY SIR STCLAIR THOMSON, M.D., F.R.C.P.

IN 1924 more than 50,000 people died from cancer in England and Wales, said Sir StClair Thomson, and the number of victims increases yearly by about 1700. Cancer of the larynx is a particularly interesting subject of investigation. First, because certain manifestations of it yield results in the way of lasting cure which are not surpassed in any other internal organ of the body; and, secondly, because in another form laryngeal cancer is well-nigh hopeless. While the speaker had been able to publish the records of lasting cure in 80 per cent. of intrinsic cancer, Mackenty questions "if extrinsic

cancer will ever be amenable to surgery." Before the war, German teaching had perhaps a too preponderating influence on the other side of the Atlantic. Now laryngo-fissure undoubtedly owed its present position to the work of British surgeons ever since the early days of Durham, Butlin, and Semon.

A clinical description, with lantern illustrations, was then given of the manifestations of both intrinsic and extrinsic cancer. With regard to the latter it was pointed out that it is not always necessary to remove the entire larynx simply because there was a growth somewhere at its upper orifice or its outer surface. In fact, extrinsic cancer of the epiglottis, the aryepiglottic folds, and the post-cricoid region can sometimes be more successfully dealt with through a lateral pharyngotomy (as shown by Wilfred Trotter) than by the mutilating operation of complete laryngectomy. Cancer in the neighbourhood of the sinus pyriformis is seldom operable.

Complete laryngectomy is much more successful nowadays both as regards operative mortality and ultimate results for the good reason that it has been almost entirely abandoned for extrinsic cancer. It is now employed simply in those cases of intrinsic cancer which are too extensive to be dealt with by laryngo-fissure. But it will become increasingly less frequent as we progress in recognising epithelioma of a vocal cord more promptly and removing it by splitting the larynx. This recognition depends on teaching the public and the profession that any hoarseness, persisting for more than three weeks, should demand expert investigation. Further details in the methods of diagnosis were then given and illustrated.

The technique of laryngo-fissure was illustrated on the screen and temperature charts and specimens were shown. Four patients on whom laryngo-fissure had been performed eight, seven, six, and five years ago were then exhibited. Three of them belong to the working class; they are all able to earn their living and all had a good, rough, strong voice. Figures were also submitted showing a permanent absence of disease in 80 per cent. of cases. The results were indicated in another way by the statement that of 55 cases operated on before 1922 for intrinsic cancer of the larynx no less than 40 of them were alive and free from recurrence three years or more after the operation. Out of 66 cases only 10 had died from local recurrence. The rest had succumbed from other causes.

FUNCTIONAL NERVOUS DISTURBANCES IN CHILDREN.

BY H. CHARLES CAMERON, M.D., F.R.C.P.

NOT without appreciating the boldness of the proceeding I am going to ask you, a gathering of scientific men, for a moment to turn your back upon the laboratory and the operating theatre and to come with me into the nursery life of some ordinary household, there to study the origin of certain common abnormalities of conduct in the child—to inspect, as it were, the very growing point of all neuropathy in the forcing house of the nursery. It is a study no doubt remote from the particular medical interests of many of you. Yet if we are not all particularly concerned as physicians with the study of childhood, as parents at least not a few of us have a very direct interest. For indeed the nursery is a place where we all meet upon common ground, parent, pedagogue, priest, pædiatrist, psychologist, and if the part played by the physician, as pædiatrist or as psychologist, is of supreme importance it is because he alone has knowledge of the full development in adult life of psychopathic disturbances and because he alone is able to appreciate the earliest deflections from the normal and to isolate from the tangle of forces acting upon the child that which is especially responsible for some particular disturbance. For such a task the wider outlook of the physician is very necessary. There is, indeed, a close resemblance between the abnormal conduct of the unstable child and the abnormal conduct of the insane, between the symptoms resulting from the functional weakness of the immature brain and symptoms directly due to degeneration or disease. In ascent and in descent, in development as in deterioration, the same country is traversed and we catch glimpses of the same scenery.

Thus it is clear that if we are to learn anything of the functional nervous disturbances of children we must pursue our investigations in the home. As with the insane, the conduct of the restless nervous child is at its worst in the intimate surroundings of the home. Let the offender be removed to an institution, an asylum in the one case, a hospital or a school in the other, and how great and immediate is the improvement! In the hospital, indeed, we may learn much of the physical processes of disease, of the child itself very little.

Maternal Traction.

In our visit to the home the first and most important object which we shall there encounter is no less a person than the mother, a being possessing the most amazing power over every action and every thought of her child. It is hardly possible to exaggerate the immensity of this power of maternal traction exercised consciously or unconsciously all day long. No doubt children differ very much one from the other in what we ascribe to inheritance, in temperament, in disposition, in ability. Yet that which is inherited is in the main a variation in the susceptibility in the degree of reaction to the influences of environment. With some children gross faults of management upon our part produce but little disturbance, with others the slightest mistake provokes its own reaction in the conduct of the child. The dependence of the conduct of the child upon its mother is doubtless at its greatest when the mother is an ardent mother, concentrating upon her single child or small family all her interests and all her thoughts. The contact becomes so close that it comes about that whatsoever the mother says of her child, thinks of him, above all, fears for him, that he tends to become. The child is quick to get ideas as to what is characteristic of himself and personal to himself. Yet he has no power of self-analysis. He judges of himself, for the most part, by what he sees in his mother's eye. The difficulty is greatest, I think, for the mother of an only child. All other interests are apt to go by the board and she settles down to an agitated contemplation of the wreckage wrought in the child by her own too great apprehension.

For in whatever way we may define maternal competence it is something very closely associated with maternal self-confidence. The response of the dominating egotistical child to conscientious yet timid and uncertain handling, I have described in a word borrowed from the literature of the alienist, *negativism*. We all know the negativistic child. To urge him to proceed downstairs determines a rush to the top of the house; dressing, equally with undressing, is resented with tears and struggles. If his mother carry him he desires to walk, if he is set to walk he desires to be carried. Negativism of this sort grows only in response to a certain type of management. It does not appear in the children of parents who are strong-minded and confident of themselves, who demand and expect obedience, who never contemplate the possibility of refusal or resistance. Nor, I think, does it appear in the children of those delightful mothers who never appear to bother even when the children habitually fall downstairs or climb with their muddiest boots over the drawing-room furniture. Negativism is the response of the child to a fault to which we are all prone as parents, the repeated and persistent attempts to secure control and the repeated and persistent failure to achieve it. Whenever traction upon the child is too obvious and too constant, yet in insufficient force, the child is forced into a posture of opposition, forced to make strain and to pull in the opposite direction.

The Force of Negativism.

Let us examine the part played by this force of negativism in the production of some of the common disorders of conduct in children. As among the insane, a persistent refusal of food, a veritable anorexia nervosa, is one of the commonest difficulties encountered in the management of the nervous child. It is instructive to note that among the poor, where food is apt to be short, the disorder is something of a rarity. The mother cuts off the hunk of bread, "That's all you're to have," says she; "I want some more," says the child; "You can't have it," says the mother. Among the very poor the opposite fault—shall we call it bulimia?—is the rule. When food is haggled over and doled out, the restless child is apt to develop an apparently insatiable hunger and to clamour all day for its satisfaction. I had in my ward last month a bright clever little girl of 6 from a cottage in the country. She was sent to me with the suggestion that her great polydipsia and polyuria were evidence of diabetes insipidus. Her life, indeed, was one long hunt for fluid. The mother told us that she had purloined and drunk two bottles of her father's stout, as well as two bottles of medicine which she found in the house. The precautions taken to ensure that she had no access to fluid were prodigious. In the ward, with a cup of water at her bedside, polyuria and polydipsia both disappeared within a few days. I understand that among a few of the least balanced adult minds in the United States prohibition has produced a reaction not very different from that encountered in this little child.

But in the nurseries of the well-to-do the common fault is over-persuasion. The child is urged, entreated, implored to take food. Sometimes, and it always makes matters worse, force is used and a strong-minded woman with uplifted spoon endeavours unsuccessfully to administer the prescribed amounts. Often the only articles of food for which the child shows any liking are those which the mother does her best to withhold from the conviction that they are unsuitable pabulum for a young child, cheese, pickles, and the like. It is always the very foods which the mother most eagerly desires the child to take that are most persistently refused. Sometimes when the struggle is at an end and the cloth removed, the child will astonish everyone by demanding food, or he may descend from his chair—in which he has refused to taste a morsel of the proffered meal—to scavenge greedily for crumbs upon the floor. Two mothers told me on the same day that they really thought that the best meal that their child made in the day was when with a parcel of broken bread they proceeded to an expedition to feed the ducks in the park. One mother had even taken to including in the parcel some nutritious pieces of brown bread and butter in the sure hope of their consumption by the child.

Successful Treatment by Judicious Neglect.

With anorexia nervosa of this sort, one treatment alone is successful. The mother must hide from the child her insistent desire that he should eat. The suggestion with which the food is proffered must be altered. The emphasis may be laid upon the fear that excess may be taken. Helpings must be ostentatiously halved. Only after a proper show of surprise and reluctance is the second half conceded. One day a boy was brought to me from the North of England. Always a poor eater, for some weeks I was assured that he had taken nothing but a few biscuits. The negativistic element was easily discernible in this child and when I explained my point to the parents, the father eagerly corroborated it. The boy, he said, was sick in trains, as many such children are. He was told, therefore, that he must not come into the restaurant car. He at once said that he felt very hungry. By insistence he got his own way, but for fear of the dreaded train-sickness his mother gave him the smallest of helpings, conceding the second helping with the greatest reluctance. As a result of the alteration in the parental attitude he then and there ate such a meal as he had not taken for years.

In the difficult question of nursery constipation, too, it is possible to discern the large part played by the negativism of the child. No doubt it is right and wise that the child's bowels should be open daily. The best way to help a child to such a desirable achievement is to take great and obvious pleasure in his regularity to convey to him the conception of himself as a small person of whom it is characteristic that his bowels are always open without fail. The direct appeal, the insistence, the agitation openly displayed when failure results—not open yesterday and to-morrow will be the third day—produces in young children a distaste and a spirit of opposition to the whole proceeding. The attempt to get the child to go to stool may produce a display of negativistic resistance comparable to that shown at meal-times or at bed-time. Such children have even been brought to me with the suggestion that there exists an anal fissure or some other cause for pain upon defæcation.

The diagnosis of this common pseudo-constipation may be supported by other observations. The subject of it is likely in his daily life to show many other instances of his tendency to negativism. Laxative drugs, in general successful enough, are here quite without effect. Only when a dosage sufficient to produce diarrhœa and perhaps actual incontinence, is the opposition and resistance overcome. It may be clear that the constipation varies in severity according to the person who is in charge of the child. A new management, for example, determined to overcome it, always produces an exacerbation. A visit to the seaside, with diversion of thought and concentration upon new employment and new surroundings, often brings temporary relief. Constipation of this sort is always said to produce fretfulness and bad conduct. Whether that is a likely result of true constipation I do not know, but it is clear that fretfulness and nervous unrest manifest themselves in an increase of negativism.

Stereotyped Movements.

In a second group of cases, of very different nature and origin, the disturbance is also perpetuated by the determined efforts of the parents to prevent it and the consequent opposition of the child. In infancy all children are prone to perform certain stereotyped movements, provocative of certain sensations which by much repetition have become pleasureable and soothing. Thumb-sucking, head-banging, thigh-rubbing or infantile masturbation are good examples of the class of movement to which I refer. As the level of the intellectual processes rises, as memory and imagination awaken, as the child lies in bed occupied in the recollection of yesterday's happenings and the anticipation of to-morrow's, these habits and these joys should be forgotten. It is very obvious that they are often kept in being by the concentration of the mother's mind upon them and by her persistent efforts to stop them. They cease only when they are forgotten. The attempts to forbid and prevent serve only to keep them in the fore-front of consciousness. The mothers of all children in whom thumb suction persists for an unduly long time have in common that they are immeasurably distressed by the habit and determined to stop it. A little girl of 4 was brought to me for inveterate thumb-sucking, which had survived much smearing of the offending digit with foul-tasting herbs, the use of a protective metal cage, rewards, punishments, and entreaties. I suggested that the mother should insist upon routine thumb suction being practised by the offender three times a day for ten minutes, on the principle that if a child's chief delight, shall we say the spinning of his top, is ordered regularly as a routine with sufficient peremptoriness, its attraction will promptly cease. In this case the thumb suction ceased within ten days.

In thigh-rubbing or infantile masturbation, which, because of its implication of the sex organs causes

even greater distress to the parents, the ill-effects of elaborate efforts to foil and restrain, are even more apparent. The worst case of masturbation that I know of was cured by the accident that he developed an acute appendicular abscess. For six weeks he was very ill with general peritonitis. All thoughts of the inveterate habit were absent from his mind and from the minds of those in contact with him as he fought for his life. All attention, his own and other people's, was concentrated on the daily dressing. If in infantile masturbation preventive apparatus must be used, and there are a few cases in which it is difficult to avoid its use, I think that no expenditure of trouble is too great to prevent the child appreciating the purpose for which the restraint is employed. The child may think that it is worn to make the legs or the back straight, but let its real purpose be hidden. Otherwise the use of the apparatus rivets the attention upon the habit so that its ultimate removal carries with it almost the certainty of relapse. Of masturbation in older children, I am not, of course, at the moment speaking.

These few examples I take to illustrate my contention that in the nursery and in nursery management there is a wide field for the practice of an elementary form of psychotherapy. It is clear that it is through the mother and by means of her alone that we can control the disturbance in the child. We need not offend her by any appearance of fault-finding. Disturbances such as we are considering do not commonly occur in the child of a woman who is not an ardent mother. It is easy to show her that in a hundred and one ways she has done nothing but good to her child. In this one point, inhibited by the urgency of her fears and anxieties, she has perhaps failed. If her understanding is convinced and her coöperation secured all will be well. She is possessed of powers over her child incomparably greater than another can exercise. She has proved that by the profundity of the disturbance provoked in the child. It is a question only how this great power can be utilised for good and not for ill.

Among other short introductory lectures on Wednesday, June 3rd, and Thursday, the 4th, there should be mentioned an address by Mr. T. P. DUNHILL on Auricular Fibrillation in Exophthalmic Goitre; one upon the Heart in Influenza by Dr. STRICKLAND GOODALL, who spoke of his conviction that the ætiology of heart disease in this country was changing the almost universal attribution to rheumatism disappearing; and one by Dr. GORDON HOLMES on Suprarenal Disease.

Sir WALTER FLETCHER, in an address on Medical Research in Great Britain, pointed out how often our fine research work had been impeded by lack of money, quoting the facts that Newton and Faraday had been endowed by official positions, while Darwin's personal wealth permitted him to carry on his work independently. He named as the four conspicuous statesmen who had contributed to the progress of scientific knowledge Henry VIII., who founded the Royal College of Physicians of London, and from whom the chairs of medicine at Oxford and Cambridge gained the title of Regius; Charles II., who founded the Royal Society; the Prince Consort, whose influence on the status of scientific institutions and scientific men had been far-reaching; and Mr. Lloyd George, who founded the Development Commission, the Medical Research Council, and the Department of Scientific and Industrial Research. Sir Walter Fletcher briefly explained the constitution and composition of the Medical Research Council, and concluded by a happy reference to the linking up of the scientific work of Great Britain with that of America, a fine example of this being the sums of money which the Rockefeller Foundation had spent in this country.

The last of these addresses was delivered by Lord DAWSON, who took as his subject the Speed of Life and Disease, and spoke wisely on the possibility that the medical profession should become more an educational body, as a result of the public appreciation that psychological culture had claims equal to those of physical culture. He pointed out that to-day human progress had outstripped human adaptation, and drew a striking, almost biting, portrait of the leader of commerce attempting to obtain a few hours leisure, heading to a breakdown, while disguising his anxieties under the name of pleasure. He believed, he said, that society was adapting itself to the new conditions, but more consideration should be given to the mental and physical make-up of the individual, and he hoped that now that doctors, in directing the health of the community, were devoting attention to prevention as well as to remedy, that the selection of the proper career of young people would come more under medical guidance.

SOCIAL FUNCTIONS.

HONORARY MEMBERSHIPS.

The President of the Inter-State Post-Graduate Assembly of America, Dr. Charles H. Mayo, during the week of their visit to London, conferred the Honorary Membership of the Assembly upon H.R.H. the Duke of York; H.R.H. the Duke of Connaught; Rt. Hon. Austen Chamberlain, Minister of Foreign Affairs; Rt. Hon. Neville Chamberlain, Minister of Health; Lord Dawson of Penn; Lord Desborough, Chairman of the Pilgrims' Society; Sir Humphry Rolleston, Bt.; Sir John Bland-Sutton, Bt.; Sir William Arbuthnot Lane, Bt.; Sir StClair Thomson, Sir William Hale-White, Sir Holburt J. Waring, Sir John Y. W. MacAlister, Sir George Newman, Mr. W. Girling Ball, and Mr. Philip Franklin.

THE GUILDHALL BANQUET.

More than 600 sat down on Friday evening at the Guildhall banquet given by the Assembly, to which a number of distinguished visitors had been invited. Dr. Charles Mayo took the chair and proposed the health of H.M. the King and the President of the United States, both of which were drunk with musical honours. Mr. Neville Chamberlain, the Minister of Health, proposed the Inter-State Post-Graduate Assembly, his theme being the general practitioner as educator. Dr. Mayo, in responding, said that where the general practitioner did his duty, medicine would stand high in that community. He envied England its Ministry of Health and its Board of Education, each with a Secretary of State of its own. (These speeches have been made the subject of a leading article.) The British Medical Profession was proposed by Dr. Hugh Cabot and Dr. Woods Hutchinson, to which Lord Dawson of Penn responded. The last toast was that of the English-speaking Nations, proposed by Sir W. Arbuthnot Lane and Sir StClair Thomson, to which Dr. Franklin Martin, Director of the American College of Surgeons, responded. At the conclusion of the banquet Dr. Mayo conferred the honorary membership of the Assembly on Mr. Neville Chamberlain.

DINNER TO DR. MAYO.

A complimentary dinner to Dr. Charles Mayo was given by the Section of Surgery of the Royal Society of Medicine on June 6th at the Hotel Cecil, London. Mr. Herbert Paterson, President of the Section, presided, and there were present, among others, Dr. and Mrs. Franklin Martin, Sir StClair Thomson, the Rt. Hon. T. P. O'Connor, M.P., Sir William and Lady Arbuthnot Lane, Sir Anthony Bowlby, Sir William MacPherson, Sir D'Arcy Power, Sir George Blacker, Dr. and Mrs. Hugh Cabot, Dr. Woods Hutchinson, Sir James and Lady Berry, Mr. Cyril Nitch, Mr. and Mrs. H. S. Souttar, and Mr. Swinford Edwards. Mr. Paterson, in proposing the health of their guest, reminded them that Dr. Mayo was the son of an Englishman, as his father was born at Eccles, near Manchester. The success of the Mayo Clinic, he said, was due to the

combination of high professional skill, consideration of the best interests of the patient, and fully organised business methods. He referred to the versatility and modest lovable disposition of their guest, and emphasised the value of clinical congresses in cementing the bonds of friendship and good-fellowship between the great English-speaking peoples. Since the visit of our American friends in 1910 we were, he said, gradually becoming used to these friendly invasions, and he hoped that they would be continued. Dr. Charles Mayo, in his reply, paid a tribute to the work of his brother, Dr. William Mayo, and thanked the members of the Section of Surgery for their warm reception. Mr. J. C. C. Davidson, M.P., proposed "America and American Surgery," and Dr. Franklin Martin replied. The toast of "The Chairman," proposed by Sir James Berry, brought the proceedings to an end.

RECEPTION BY THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

In the afternoon of Friday, June 5th, the President and Council held a reception in honour of the American delegates and their friends in the Museum of the College, when Sir John Bland-Sutton, the President, delivered an entertaining half-hour address on the intriguing subject of the Psychology of Animals Swallowed Alive. His text occurred to him, he said, one evening after dinner, in the thought whether animals which swallowed their prey alive endured discomfort from the efforts of the prey to get out again. With regard to the story of Jonah in the whale, he had once thought a parallel of that incident could not be found in modern times, but he since discovered in the *Boston Post Boy* for 1771 an account, vouched for by eye-witnesses, of a sailor in a small whaling ship who had been taken into a whale's mouth, and had been eventually vomited up—"rather sick and dizzy, but alive." The lecturer then went on to describe the habits of a prickly fish with two powerful teeth used for crunching coral. This fish was often swallowed by sharks, and when swallowed was able to blow itself out to the size of a football, thus causing its host considerable discomfort—and worse, for with its powerful teeth it would gnaw its way right out through the shark's side. "What terrible agony," said the lecturer, "but what a just revenge!"

Another fish whose living meal often revenged itself was the "black swallower," the Chiasmodon. Its stomach was so distensible that it could swallow a fish much larger than itself. Putrefaction of too ample a meal sometimes preceded digestion, with the result that the gas-distended stomach brought the deep water Chiasmodon to the surface, where it could not live. Sir John Bland-Sutton then described several other instances of living meals, among fishes and snakes—of pike swallowing pike, of dogs consuming whole Alaskan frozen fish which were in ventro revived to activity, and finally of the adventures of a pet tree frog of his own. One story was of a snake which had swallowed a frog alive. The snake's owner laid the animal on a table to watch developments. Someone accidentally tapped the table, whereupon the snake jumped off and the interned frog was heard to squeak. At this the snake opened its jaws and ejected its meal, which, covered with slime, hopped away into safety. The lecture was greatly enjoyed by the guests, who recorded their appreciation in a very adequate manner.

A pleasant programme of music was discoursed throughout the remainder of the afternoon. The guests had the opportunity of inspecting the College museum and library, where many interesting old prints and portraits were on view and where a microscopical demonstration was staged.

DINNER WITH THE PILGRIMS.

The Duke of Connaught, as President of the Society, took the chair on Thursday evening, June 4th, at a dinner given by the Pilgrims at the Hotel Victoria, London, in honour of the medical visitors from the United States and Canada. The health of the American doctors was happily proposed by Mr. Austen Chamberlain, who disclaimed any connexion with a liberal profession, while acknowledging a profound debt to his professional advisers. He had, he thought, adopted a sufficient share of responsibility in matters of importance, so that it was an immense satisfaction to him to feel that his health was no business of his while he entrusted it to his medical adviser. In an eloquent conclusion, describing the progress made in the last generation in the study of tropical diseases, he coupled the name of Dr. Charles Mayo with the toast. Dr. Mayo, in acknowledging the happy feeling which had been engendered by the Royal welcome which had been extended to the Assembly in London, said that men from across the Atlantic had the same ideas as those that were found in the greatest city in the world, for they were of the same stock—a personal matter to himself whose family for 200 years had been buried in a Manchester churchyard and whose father walked a London hospital before deciding to make his way in America. Dr. Mayo then addressed the Duke of Connaught, Mr. Chamberlain, and Lord Desborough, the Chairman of the Pilgrims, and declared them honorary members of the Inter-State Assembly.

LUNCHEON TO DR. MAYO.

At an informal luncheon earlier on the same day, presided over by Mr. A. Webb-Johnson at the Middlesex Hospital, the connexion of Dr. Mayo with London, and especially with Middlesex Hospital, was brought prominently to notice, for at the luncheon there was exhibited to Dr. Mayo the portrait of his great uncle, who was a surgeon to the Middlesex Hospital 100 years ago, and was one of the founders of the medical school there.

A number of American doctors and friends attended a garden party in the square of St. Bartholomew's Hospital on Thursday afternoon, when the Great Hall, Hospital Dispensary, and the Medical College buildings were on view, and Sir D'Arcy Power gave a short address on the antiquities of the hospital and its neighbourhood.

The medical staff of the Central London Throat, Nose, and Ear Hospital entertained a party of 40 to luncheon at the Carlton Hotel on Tuesday in connexion with the visit of the Inter-State Post-Graduate Assembly of America, followed by a demonstration of special cases, operations, and lectures by members of the staff at the hospital.

THE BATEMAN APPEAL.

As already explained in THE LANCET, it has been felt that material assistance ought to be offered to Dr. Bateman to meet the legal expenses of his successful appeal and to make good the deficiency in his professional income. Accordingly the Bateman Fund has been opened and lists of contributions have appeared in recent issues. We have received additional contributions as follows:—

	£	s.	d.
Already received and acknowledged ..	465	18	0
A Grateful Patient	5	5	0
Anonymous	1	0	0
Dr. O'Sullivan	1	0	0
"Miles"	0	10	6
	473	13	6

Remittances should be forwarded to the Manager of THE LANCET, 423, Strand, W.C. 2, and made payable to the "Bateman Fund Account."

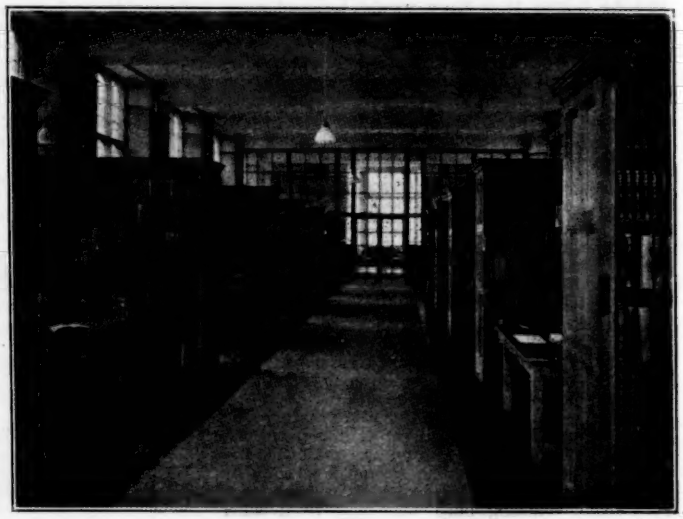
PRESTON ROYAL INFIRMARY.—This hospital of 200 beds is to be enlarged by a new wing containing 72 beds, an additional operating theatre, and a laboratory, at a cost of £30,000.

BRISTOL MEDICAL SCHOOL.

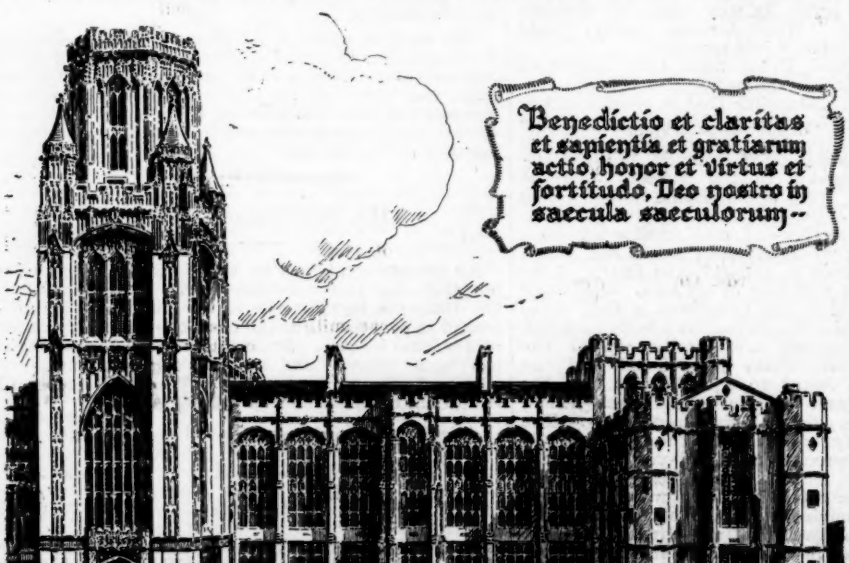
ROYAL OPENING OF NEW UNIVERSITY BUILDINGS.

"At one time it was thought that a university town was the seat of a university and nothing else, and people would have seen something incongruous in the idea of a university being placed in a great commercial and manufacturing town like Bristol. But it has been the most characteristic feature in the modern development of higher education that the newer universities have been founded in busy and populous centres. I am convinced that this is in the best interests of both learning and business, and that the interaction of the two is stimulating and helpful to each other."

These words were spoken by His Majesty the King when, accompanied by Queen Mary, he formally opened the new buildings of University of Bristol on Tuesday, June 9th. The beautiful and dignified structure, of which we reproduce a drawing from the souvenir booklet published by Messrs. J. W. Arrowsmith, Ltd., is due to the munificence of the Wills family, and the occasion of the opening marks a notable event in the annals not only of the 16-year-old University, founded by a Charter from King Edward VII., but of the ancient city. In 1909 the University College of Bristol and the Merchant Venturers Technical College were merged into a new university, but incorporation of the medical school was not then made complete. As the result of the suggestions from the University Grants Committee and the Treasury, the teachers of clinical subjects in the medical faculty who had preserved a partial autonomy have now surrendered their proprietary rights to the University, and the whole medical curriculum comes under University management. The medical student of to-day in Bristol enjoys exceptional opportunities and advantages. The preliminary studies of chemistry, biology, and physics are carried on in some of the newest and most up-to-date laboratories in the kingdom. The chemical wing was built in 1911 and the new physics wing built and endowed by the late Mr. H. H. Wills is nearing completion. The Department of Physiology is situated in part of the wing by the Arrowsmith Tower, the tower which forms a striking landmark and characteristic feature of the new buildings. Above the physiological theatre and laboratories is the Department of Pathology. The new building contains a fine medical library, of which we reproduce an illustration, in which the separate libraries of the Royal Infirmary, General Hospital, the Bristol Medico-Chirurgical Society, and the University College are housed together. Although the medical faculty for Bristol University is of very recent creation, the Bristol Medical School was founded over 100 years ago. Its early history is sketched by Dr. J. A. Nixon in the current issue of the *Bristol Medico-Chirurgical Journal*, in which he tells how the project of founding a medical school in connexion with the infirmary was first considered in 1816. By 1830 various independent courses of



Medical Library.



University of Bristol: The New Buildings.

lectures had been combined to form two recognised medical schools, the School of Anatomy and Medicine in Limekiln-lane recognised by the Apothecaries' Hall), and the Bristol Medical and Surgical School (recognised by the Royal College of Surgeons). Three years later these schools were amalgamated to form the Bristol Medical School. The inauguration of the new buildings will surely open a new era of opportunity for the study of medicine in Bristol. All the various authorities in Bristol responsible for the hospital management have taken up the most friendly and helpful attitude towards the University and its medical students, both undergraduate and post-graduate. The student has at his disposal 630 beds for the study of clinical material, divided between the Royal Infirmary and the General Hospital, and in addition 566 beds in the large modern Poor-law hospital at Southmead. The City Fever Hospital has a total of 271 beds, and there are opportunities to study tuberculosis at the Municipal Dispensaries of the Frenchay Park Colony for children. Further, students are welcomed at the small but well-equipped orthopædic hospital which contains 36 beds.

ROYAL FREE HOSPITAL:
THE FESTIVAL DINNER.

THE Festival Dinner of the hospital was held on Tuesday, June 9th, in the Guildhall, London, E.C., by permission of the Corporation. Lord Riddell, President of the hospital, was in the chair, and presided over a very large company of guests of both sexes. The occasion was characterised by some good speaking, a spirit of general enthusiasm for the object of the dinner, and a substantial pecuniary harvest.

After the loyal toasts, the Rt. Hon. J. H. Thomas, M.P., proposed the Prosperity of the Hospital in terms of real eloquence. He started humorously by observing that, had it not been for a fatal accident which terminated its existence, the representatives of the Labour Government would have been present last year at the annual banquet at the Guildhall; he had arranged to deliver a really Imperialistic oration on that occasion, and though that speech could not be made he was grateful for the opportunity which Lord Riddell had given him of speaking in the Guildhall. He proceeded to draw once again the old picture of the pathetic position of the sick poor, but did so in new and vivid terms while testifying to the value of hospital work. The toast was replied to by the Chairman and Dame Louisa Aldrich-Blake. Lord Riddell said that it appeared that any self-respecting hospital that desired to raise money must either be falling down, or about to close many of its wards, or have a substantial overdraft at the bank. In the case of the Royal Free Hospital he admitted the existence of the overdraft, but was unable to say that the fabric was falling down or that the Governors were about to close any of the wards. On the contrary, he stated the building to be as solid as ever, while not only would no wards be closed, but the appeal that night was directed to obtain money to build new children's wards. He reinforced his plea for children by a quotation from a speech at a charity dinner made by Charles Dickens 80 years ago, and disclosed the magnificent generosity of Mr. Alfred Langton, "a fairy of Gray's Inn-road." Dame Louisa Aldrich-Blake, who was received with continued applause, spoke out of a long association with the hospital, upon its position as the seat of the London School of Medicine for Women, and took the opportunity of congratulating Sir James Berry, the senior surgeon, upon his recent knighthood.

The toast of the Guests, proposed by Dr. J. Walter Carr, was responded to by Lord Jessel and Mr. C. T. Cramp; and that of the Medical Profession, proposed by Sir Charles Wakefield, was responded to by Sir Humphry Rolleston and Sir Squire Sprigge.

The sum of £25,000 was raised at the dinner, including a donation of £5000 from Mr. Langton, and one of nearly £4000 from Lord Riddell.

Correspondence.

"Audi alteram partem."

CLEAN MILK IN HOSPITALS.

To the Editor of THE LANCET.

SIR,—In view of Dr. Chalmers Watson's admirable propagandism in connexion with supplies of clean milk, and the special article by Dr. Savage on the Milk-supply and its Improvement appearing in your columns, it appears desirable to put on record the Aberdeen position. In October, 1924, Aberdeen Town Council gave authority to have certified milk used in all the public health institutions of the city. These include the City Fever Hospital and Tuberculosis Hospital, Burnside Home for Mothers and Babies, Loch-street Home for Mothers and Babies, and the Charlotte-street Day Nursery. At the same time the town council authorised that certified milk only should be supplied to all mothers and children obtaining milk in their homes from the health department, and also to all tuberculous patients similarly receiving milk in their homes.

With a view to encouraging the production of certified milk, the Aberdeen dairymen have been informed that the town council contract will necessarily be divided among dairymen retailing certified milk. At the same time, producers of milk in the Aberdeen area have been assured that the health department will do everything in its power to assist them should they be prepared to supply certified milk. Thus, whenever a dairyman is prepared to supply certified milk, the public health department is prepared to analyse the milk samples twice weekly, free of charge, and to send results of the analyses, both chemical and bacteriological, to the milk producer for his guidance. The milk producers have also been informed that they will be given a period of some six months in which to adjust their production of milk, so that it meets the certified standard, without any interference from the health department apart from helpful advice. The milk producer who at present holds the Aberdeen Town Council contract for certified milk is using the bacteriological counts, as supplied by the health department, to form the basis of the bonus system on which he pays his workers. Thus the milk counts as sent to the milk producer are posted on a notice board every week at the two farms producing the milk for the information of the workers, and the workers receive a bonus to their wages descending in amount according as the count of the milk ascends from under 5000, under 10,000, under 15,000, &c., organisms.

When certified milk was thus introduced into Aberdeen some seven months ago, all the medical practitioners of the city were circularised, urging them to do everything in their power to get their patients to use certified milk in their households. The wide publicity given by your columns to the matter of a clean milk-supply is of the most useful description and will, I am confident, be productive of much good.—I am, Sir, yours faithfully,

J. PARLANE KINLOCH,
June 8th, 1925. Medical Officer of Health, Aberdeen.

BAKER'S ITCH AND WORKMEN'S COMPENSATION.

To the Editor of THE LANCET.

SIR,—Captain J. T. Ainslie Walker expresses the opinion that the industrial ailment "baker's itch" (baker's eczema) is attributable to the use of certain so-called "flour-improvers," and he quotes Dr. Prosser White as stating that this affection is unknown in France and the United States, where these additions to flour are forbidden. I have brought forward definite facts[1] to show that in at least one bakery potassium persulphate was the cause of the trouble.

[1] THE LANCET, August 11th, 1923, p. 279.

It is stated by the trade that baker's eczema was not unknown in this country prior to 1911—the year in which persulphate flour-improvers were first patented—but it is obvious from the continually recurring interest in this subject that it is much more common now than formerly. I agree with Dr. White that "improvers" are not the whole story, but I cannot subscribe to his statement that "no improvers are used in the confectionery trade." Confectioners may not "add" improvers to the flour they use, but they certainly often use flour containing "improvers" added by the millers. It may be that the comparative immunity of the bakers in the United States and France is in part accounted for by a more general use of machinery, as distinguished from the handling of wet dough practised here in many small bakeries. Nevertheless, I am convinced that baker's eczema has arisen in this country, in known instances recorded by me, by reason of the employment of these foreign chemicals which have been added to flour. Such additions are, in my opinion, unjustifiable on any ground.

I am, Sir, yours faithfully,

ARNOLD ROWSBY TANKARD, F.I.C.,
City Analyst, Hull.

June 5th, 1925.

COLLOIDAL KAOLIN.

To the Editor of THE LANCET.

SIR,—The authoritative statements of Sir Wm. J. Pope and Prof. John W. H. Eyre in your issue of May 30th add weight to the rapidly accumulating evidence regarding the curative properties of colloidal kaolin. Since you published my original paper (THE LANCET, 1923, i., 432) the medicinal use of colloidal kaolin has extended widely. The Kaylene Company (which prepared colloidal kaolin for medicinal use at my suggestion) is now producing four preparations: Kaylene, plain; kaylene saline (i.e., colloidal kaolin with saline aperient); kaylene mint (colloidal kaolin with oil of peppermint); and kaylene lax (colloidal kaolin with phenol-phthalein).

Experience is fully bearing out the claims I made for it, and while I have nothing essential to add, I desire to emphasise a few points: 1. Colloidal kaolin must be of guaranteed purity and sterility and in the finest attainable state of mechanical subdivision. 2. Colloidal kaolin counteracts the toxæmia which results from the ingestion of unsuitable food—i.e., food that is apt to decompose in a toxic bowel. It is unwise, however, to exploit this way of escaping the consequences of wrong feeding. Obviously the best results are to be obtained by taking colloidal kaolin while using the diet and régime most suited to the relief of stasis. 3. Liquid paraffin as well as colloidal kaolin is nearly always needed in stasis. 4. Colloidal kaolin should not be given—in the hope that it will cure—without first deciding by X ray investigation that no mechanical block (kink, controlling appendix, scar of an ulcer, or neoplasm) needs surgical treatment.

I am, Sir, yours faithfully,

Upper Wimpole-st., W., June 6th. ALFRED C. JORDAN.

BLOOD CHANGES IN SPRUE AND PERNICIOUS ANÆMIA.

To the Editor of THE LANCET.

SIR,—I am sorry to have overlooked Dr. William Hunter's criticism in your issue of Jan. 31st, p. 255, of my calculation of colour-indexes (THE LANCET, Jan. 10th, p. 75). I can easily show that these objections are founded on a misunderstanding. I estimated my hæmoglobin values with the original hæmometer of Sahli, manufactured by E. Büchi at Bern. In all my publications the numbers under the heading "Hæmoglobin (Sahli)" are hæmometer degrees (Sahli), and not percentages; 80 degrees (Sahli) correspond to 100 per cent. hæmoglobin, which is normal. To get percentages one has to calculate them; 20 Sahli is equal to $20 \times 100 \div 80$, or 25 per cent. hæmoglobin. As in Sahli's first hæmometer the degrees gave the percentages; on the Continent the bad habit to speak of per cent. (Sahli) when hæmometer degrees (Sahli) of Sahli's new hæmometer are meant is still maintained. I hope this will do to elucidate the matter.

To understand how Dr. Hunter could find greater differences than 1/5, I re-calculated my indexes with the following result: Of my 18 indexes I found now for 11 the same value as in the blood tables in my article; for 3 a value of 0·01 higher or lower, for 2 a value 0·1 higher; and for 2 others a value of 0·03 and 0·07 lower than in the tables. Only the two latter re-calculations are in the advantage of Dr. Hunter's presumption that my indexes should be too high. The differences can probably mostly be explained in a different way in which the decimals are neglected in the calculations, and even if slight errors are made, these are too small to have any practical significance and do not affect the conclusions, which have to be drawn from my figures.

I trust that Dr. Hunter and the English reader will be satisfied with this elucidation and that I have convinced Dr. Hunter that I use the usual standards. In conclusion, I wish to thank him for having cured me from a bad habit.

I am, Sir, yours faithfully,

The Hague, June 6th. C. ELDERS.

POST-GRADUATE TEACHING IN MIDWIFERY.

To the Editor of THE LANCET.

SIR,—I was most interested in reading Dr. Margaret Balfour's recent letter (THE LANCET, May 23rd, p. 1104) as my own experiences in seeking post-graduate work in midwifery after the war, in 1919, were much the same as hers, both in London and at the Rotunda. Having graduated elsewhere, and desiring to see something of London's methods, I applied to the Fellowship of Medicine, but the obstetrician to whom I was referred from there received me unwillingly and advised me to return to my own medical school or else to go to Dublin, saying London could receive no new students. After various similar inquiries I wrote to the Rotunda contemplating six months' work there, but the nature of the tuition was such that I transferred from there when one month had elapsed, like very many other graduates recently demobilised. At the Rotunda the clinics were crowded with students, graduates, and large numbers of pupil midwives, the Master turning to the latter for a correct reply when this was not furnished by the particular graduate or student whom he questioned!

If greater facilities for post-graduate tuition and opportunity for work in obstetrics are provided here fewer doctors will go to Vienna and Paris and other continental schools, as they at present do.

I enclose my card, and am, Sir, yours faithfully,

June 6th, 1925. M.B., Ch.B., L.M.

A DISCLAIMER.

To the Editor of THE LANCET.

SIR,—May I ask you to publish a disclaimer of my having been in any way responsible for the inspiration and publication in the current issue of the *Ebbw Vale Weekly Argus* of a paragraph entitled "Doctor's Splendid Record: Two Medical Men Exonerated from Blame."

An inquest—held after the death of a patient from pneumonia supervening upon "radical operation" for inguinal hernia—was held at the instance of the deceased's relatives to establish the fact that the train of circumstances which led up to his death was the result of an accident—i.e., the original rupture. But when a death occurs after an operation there is wont to arise a suspicion that something went wrong with the operation—and the subtitle "medical men exonerated" suggests this view.

I simply mentioned the usual percentage of deaths after the "radical cure operation" to show that my average was well within the record.

I am, Sir, yours faithfully,

H. NEVILLE TAYLOR.

The Hospital, Ebbw Vale, June 3rd, 1925.

Parliamentary Intelligence.

HOUSE OF COMMONS.

TUESDAY, JUNE 9TH.

TAXATION OF PATENT MEDICINES.

THE House went into Committee on the Finance Bill, Mr. HOPE (Chairman of Committees) in the chair.

Clause 2 provides that the additional excise duties imposed by Section 11 of the Finance (No. 2) Act of 1915 upon medicines liable to duty shall continue to be charged until August 1st, 1926.

On the motion that the clause stand part of the Bill,

Captain WEDGWOOD BENN complained of the way in which it was drawn. It was an elementary canon of taxation that the taxpayer should know exactly what, and upon what, he had to pay. The clause was the worst possible example of legislation by reference. It referred to the Finance Act of 1915, which in turn referred back to the Medicine Stamps Act of 1802, and that measure was related to the Tonnage and Poundage Act of Charles II. The Act of 1802 set out a schedule of medicines liable to be taxed. Giving examples of the medicines, he quoted the following: Asiatic bilious pills, Austin's chalybeate pills, Addison's re-animating European balsam, Clyde balsam, Guest's Welcome Guest powder, and Wheatley's ointment and fluid. The Act of 1812 revised the schedule and that was the last revision he could find. He asked if it would be possible between now and next year to look into this question, and to include in the next Finance Bill a clause, stating plainly what the taxes were and on what commodities they were levied.

Mr. W. GUINNESS (Financial Secretary to the Treasury) said that the first legislation on this subject was passed in 1783. Since then there had been repeated amendments. He admitted that it was not very easy for anyone to summarise the principles on which the duties were imposed. Speaking generally, there were three alternative tests of these preparations which were liable to duty. The first test was that they must be advertised or, in other words, recommended as a specific for some illness or disease. If they said that so-and-so's preparation cured headache, they were liable to duty, but if they said that such-and-such an ointment was good for the skin, and therefore not a specific for a disease, they did not come within that definition. The second test was that it should be secret, and the third was that it should be proprietary. The proprietary test covered most of the preparations that came under the old patent medicine duties. The codification of legislation on the subject was a matter into which he would like to look further, but it concerned the Ministry of Health rather than the Treasury. A few years ago a Select Committee inquired into this subject, but nothing was done as a result of their report. There were many more complicated forms of revenue collection, which were based upon a far more scattered legislative code than this particular patent medicine duty. Our customs legislation had not been codified for many years, but in view of the fact that it was working smoothly he did not think the House would see any cause to resist the retention of this clause. The duty was doubled in 1915 as a war tax, and was now yielding over £1,300,000, which was nearly three and a half times as much as before it was increased. That showed that the tax was useful from a revenue point of view, and it was not pressing hardly on any section of the population.

Sir A. MOND said that he did not admit that Mr. Guinness's statement about the customs was an adequate reason for not dealing with this matter. It was time that both questions were cleared up. This matter had nothing to do with the Ministry of Health. If the recommendations of the Patent Medicines Committee which sat some time ago were adopted it would be necessary entirely to alter the process by which these duties were levied. There were a large number of American patent medicines or mixtures being imported into this country. The importers of these foreign productions were given an advantage compared with those of British manufacture. He suggested that an expert committee should be set up to study the question.

Dr. HADEN GUEST said that the composition of most of these patent remedies was perfectly well known and were quite simple. Their vogue depended on the extent to which they were advertised. He thought that it was right that the law on the subject should be codified and brought up to date before the next Finance Bill was produced, and he hoped that would be done. If they reduced the law to a reasonable and intelligent code more attention might be paid to the demerits of some of these productions.

The clause was agreed to.

Progress in Housing.

Sir WILLIAM DAVISON asked the Minister of Health what progress had been made in the provision of houses during the past three months.—Sir KINGSLEY WOOD replied: During the three months ended May 1st last 21,674 houses were completed in England and Wales in connexion with State-assisted schemes, and 56,202 were in course of construction on May 1st. Particulars are not available as to the number of houses erected during the same period by private enterprise without Exchequer assistance.

Medical News.

UNIVERSITY OF LONDON.—At examinations held recently the following candidates were successful:—

THIRD (M.B., B.S) EXAMINATION FOR MEDICAL DEGREES.

Honours.—John C. Barrett (*b*), St. Thomas's Hosp.; Richard A. Brews (*d*, *e*), London Hosp.; Charles P. Craggs (*d*), St. Bart.'s Hosp. and Durham University; William Evans (*d*), London Hosp.; Reginald S. Johnson (*a*, University Medal) and Frederick D. S. Poole (*a*), St. Bart.'s Hosp.; Mary E. Tyars (*a*, *e*), Univ. Coll. Hosp.; Iris V. I. Ward (*d*), London Sch. of Med. for Women; and Arthur J. Wrigley (*b*), St. Thomas's Hosp.

(*a*) Distinguished in Medicine. (*b*) Distinguished in Pathology. (*d*) Distinguished in Surgery. (*e*) Distinguished in Midwifery.

Pass.—Harriet E. Acheson, London Sch. of Med. for Women; William L. Ackerman, London Hosp.; Francis G. Allan, St. Thomas's Hosp.; Harold G. Anderson, St. Bart.'s Hosp.; Doris M. Baker, St. Mary's Hosp.; Margaret A. Bannerman and Alison Elfreda M. Barnaby, London Sch. of Med. for Women; Philip C. Bennison, Guy's Hosp.; Dora M. Berry, London Sch. of Med. for Women; Thomas S. Blacklidge, Guy's Hosp.; Solomon Bloom, St. Bart.'s Hosp.; William G. Booth and Ralph Brooke, Guy's Hosp.; Hilda L. Byett, London Sch. of Med. for Women; John A. Carman, London Hosp.; Leslie I. M. Castleden, St. Bart.'s Hosp.; Edward H. P. Cave, King's Coll. Hosp.; Edith I. Clark, Univ. Coll. Hosp.; Harold G. Close, Guy's Hosp.; Doris M. Collins, London Sch. of Med. for Women; George E. C. Collis, Univ. Coll. Hosp.; Cecily D. Crosskey, London Sch. of Med. for Women and Birmingham University; Cedric K. David, Cecil H. Devereux, and Alfred C. M. Elman, Univ. Coll. Hosp.; Mary H. Elmitt, Barbara Finch, and Mary S. A. Foden, London Sch. of Med. for Women; Francis G. France, St. Bart.'s Hosp.; Ian W. Gallant, Univ. Coll. Hosp.; Florence M. Gamble, London Sch. of Med. for Women; Katharine A. C. Gillie and Arthur W. Grace, Univ. Coll. Hosp.; Geoffrey E. R. Hamilton, King's Coll. Hosp.; Alfred B. Hodgson, Birmingham University; Maurice W. P. Hudson, St. Thomas's Hosp.; Roland G. W. Husbands, Univ. Coll. Hosp.; Beatrice Jervis-White-Jervis, St. Mary's Hosp.; Ernest F. Johnson, St. George's Hosp.; Bertram H. Jones, St. Thomas's Hosp.; Horace Joules, Middlesex Hosp.; Noel E. Farnwell Kemm, Bristol University; Victor J. F. Lack, London Hosp.; Muriel A. Lester, London Sch. of Med. for Women; Neville L. Lloyd, Guy's Hosp.; Alec McMillan, Birmingham University; Richard G. Maliphant, Univ. Coll. Cardiff and Univ. Coll. Hosp.; Bernard A. J. Mayo, St. Bart.'s Hosp.; Joseph H. Moore and Henry S. Morley, Univ. Coll. Hosp.; Marjorie Murrell, Josefine W. Nagel, and Elizabeth H. R. Newboult, London Sch. of Med. for Women; Margaret D. Nichols, London Hosp.; Helen E. D. E. Ornstein, King's Coll. Hosp.; William E. Rees, St. Thomas's Hosp.; Laura M. Rhodes, London Sch. of Med. for Women and St. Mary's Hosp.; Frederick T. Ridley, Birmingham University; John J. R. Robinson, St. Thomas's Hosp.; Sybil H. G. Robinson, London Hosp.; Edith M. Ross-Johnson and Frank E. E. Schneider, Univ. Coll. Hosp.; William G. Sears, Guy's Hosp.; Charles N. Smith, Univ. Coll. Hosp.; Sylvia M. T. Smith, Univ. Coll. Cardiff and Bristol University; Victor A. T. Spong, St. Bart.'s Hosp.; Nettie H. Stein, London Sch. of Med. for Women; Ernest V. Suckling and Glyde P. Tatton, London Hosp.; Catharine F. Taylor, London Sch. of Med. for Women; Ronald W. Thomas, London Hosp.; William R. Thrower, St. Bart.'s Hosp.; Mary M. Wickham, London Sch. of Med. for Women; Edward R. P. Williams, Univ. Coll. Hosp.; Edith V. Wood, London Hosp.; and Joyce P. Yeoman, St. Mary's Hosp.

King's College.—At the last meeting of the Senate of the University final approval was given to proposals of the Delegacy for extensions to the Department of Physiology. Building will be commenced at an early date and it is expected that the new rooms will be ready by the end of the long vacation. By the new building facilities will be provided for experimental research, a professor's room, and for the teaching of advanced practical mammalian physiology. Approval was also given for the establishment of two research studentships, each of the annual value of £100, while a sum of £50 has been set aside to meet the expenses of such research.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.—At the monthly meeting of the Faculty held on June 1st the following were admitted (after examination) as Fellows of Faculty:—

John Gardner, M.D., Glasgow; Stanley Galbraith Graham, M.B., Glasgow; Chandiram Hassomal Primlani, M.B., B.S., London; James Hinton Robertson, M.B., Ch.B., Glasgow; and James Taylor, L.R.C.P. Edin., F.R.C.S. Edin., Glasgow.

Dr. T. S. Beauchamp-Williams, who was a Member of the last House of Commons and who contested Lambeth (Kennington) unsuccessfully last October, is standing as Labour candidate in the Eastbourne by-election, for which polling takes place on June 17th.

GENERAL MEDICAL COUNCIL: SUMMER SESSION.—A penal case, the hearing of which was commenced on May 29th, was resumed on June 4th, and concluded on June 5th. The Council found the charges brought against the practitioner in question were not proved to the Council's satisfaction.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART. To-day, June 13th, at 3.45 P.M., the foundation-stone of this hospital's out-patient department extension will be laid by the Grand Master of the Order of Crusaders, assisted by several hundred members of the Order. At 2.30 P.M. a preliminary service will be held at St. Marylebone Parish Church, at the conclusion of which a procession from the church to the hospital will be formed.

DAVID LLOYD ROBERTS LECTURE.—The nomination for this annual lectureship, founded by bequests of the late Dr. David Lloyd Roberts, of Manchester, is alternately made by the Royal College of Physicians of London, the Medical Society of London, and the Royal Society of Medicine. This year the nomination is in the hands of the Royal Society of Medicine. The Council has invited Sir Arthur Keith, F.R.S., who has consented to deliver it at 1, Wimpole-street, London, on the afternoon of Monday, Nov. 16th.

AUSTRALIAN AND NEW ZEALAND MEDICAL ASSOCIATION IN ENGLAND.—The half-yearly dinner of this association will be held at the Trocadero Restaurant, Piccadilly, London, on Friday, June 26th, at 7.45 P.M. All visiting Australians and New Zealanders wishing to be present should communicate with the secretaries, Drs. E. T. C. Milligan and H. Bedford Russell, at 86, Harley-street, W. 1.

GLASGOW UNIVERSITY CLUB, LONDON. — The annual summer dinner of this club will be held at the Trocadero Restaurant, Piccadilly, W., on Friday, July 3rd, at 7.15 for 7.30 P.M. The Right Hon. Augustine Birrell, K.C., LL.D., will preside. Any Glasgow University men who, though not members of the club, desire to attend are requested to communicate with the hon. secretaries, 1, Harley-place, London, N.W. 1.

ROYAL MEDICAL BENEVOLENT FUND GUILD.—A produce market and fête will be held at the Royal Botanic Gardens, Regent's Park, on Wednesday, June 24th, from 2.30 to 9 P.M., in aid of the Guild. Promises of garden or dairy produce will be most gratefully received by Miss Stanham, the fête secretary, R.M.B.F.G. Office, 58, Great Marlborough-street, W. 1, who will send out official labels and directions for dispatch. If wet the fête will be held under cover at the gardens. Tickets (before 5 P.M. 2*s.*, after 5, 1*s.*, children 6*d.*) may be obtained beforehand from the secretary or any member of the committee.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION. — The second of the present series of lectures arranged by the Fellowship will be given by Sir Gerald Giffard on Wednesday, June 17th, at 5.30 P.M., on Some Madras Methods in the Teaching and Practice of Midwifery.—As the course arranged primarily for general practitioners by the London Temperance Hospital proved successful, it has been decided to hold another from June 22nd to July 4th.—The special course in Urology due to begin at St. Peter's Hospital in the middle of the month has been unavoidably postponed to June 29th to July 25th. Instruction will be given daily in the out-patient departments, and lectures dealing with the Diagnosis and Treatment of Urinary Diseases will be delivered by members of the staff.—From July 6th to 17th an intensive course in Cardiology will be held at the National Hospital for Diseases of the Heart. This course is strictly limited to an entry of 16, so that early application is desirable.—The Queen's Hospital, Hackney-road, will give a course in Diseases of Children from July 6th to 18th, and instruction will be available throughout the day in the various departments of the hospital.—From July 27th to August 15th the West End Hospital (out-patient department, 73, Welbeck-street) will hold a course dealing with the Diagnosis and Treatment of Nervous Diseases.—For full particulars and copies of the syllabus of the above courses, together with the programme of the Fellowship of Medicine, application should be addressed to the Secretary at 1, Wimpole-street, London, W. 1.

Medical Diary.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Monday, June 15th.

Social Evening commemorating the birth of Charcot.
Special interest is given to this occasion as in addition to the address by Dr. Farquhar Buzzard on Charcot and the Centenary Celebration of his Birth, a collection of bibliography by Charcot and his pupils, made by Mr. Walter G. Spencer, will be exhibited.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE, 11, Chandos-street, Cavendish-square, W.
THURSDAY, June 18th.—7.45 P.M., Demonstration: 8.15 P.M., General Meeting. The new President, Dr. Andrew Balfour, C.B., C.M.G., will be inducted. The Chalmers Medal will be awarded to Prof. Warrington Yorke, who will read a paper on Further Observations on Malaria made during Treatment of General Paralysis, preceded by an announcement by Dr. G. C. Low on the use of a drug named "Smalarina" in the treatment of malaria.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF PHYSICIANS.
TUESDAY, June 16th.—5 P.M., Dr. S. A. K. Wilson: Disorders of Motility and of Muscle Tone with special reference to the Corpus Striatum. (Third Croonian Lecture.)
THURSDAY.—5 P.M., Dr. Wilson: Last Croonian Lecture.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, June 15th, to SATURDAY, June 20th.—WEST LECTURE HALL, Royal Society of Medicine, 1, Wimpole-street. Lectures arranged by the Fellowship of Medicine and open to all members of the medical profession. Wed., June 17th, 5.30 P.M., Sir Gerald Giffard: Some Madras Methods in the Teaching and Practice of Midwifery.—CHELSEA HOSPITAL FOR WOMEN, Arthur-street, S.W. Post-graduate Course in Gynæcology. Lectures and demonstrations daily. Operations, pathological demonstrations. (Second week.)—LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE, Endsleigh-gardens, N.W. Tuesday and Thursday at 2 P.M. Lecture-demonstration by Dr. P. Manson-Bahr and Dr. G. C. Low.—ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square. Daily demonstrations in the O.P. Department. Bi-weekly lectures by Dr. Fox and Dr. Whitfield.—CITY OF LONDON HOSPITAL FOR DISEASES OF THE HEART AND LUNGS, Victoria Park. Post-graduate Course in Chest, Heart, and Lungs. Lectures, clinical demonstrations, and laboratory demonstrations. (Second week.)—LONDON LOCK HOSPITAL, Dean-street. Comprehensive Course. Daily out-patient instruction and lecture dealing with the diagnosis and treatment of V.D.

WEST LONDON POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, W.
MONDAY, June 15th.—11 A.M., Surgical Registrar: Surgical Wards. 12 noon, Mr. Simmonds: Applied Anatomy. 2 P.M., Dr. Scott Pinchin: Medical Out-patients.
TUESDAY.—11 A.M., Mr. Endean: Venereal Diseases. 12 noon, Dr. Burrell: Chest Cases. 2 P.M., Mr. Sinclair: Surgical Out-patients.
WEDNESDAY.—11 A.M., Medical Registrar: Medical Wards. 2 P.M., Dr. Burnford: Medical Wards. 2.30 P.M., Mr. Donald Armour: Surgical Wards.
THURSDAY.—10 A.M., Dr. Grainger Stewart: Neurological Dept. 12 noon, Dr. Pritchard: Modern Methods in Medicine. 2 P.M., Mr. MacDonald: Genito-Urinary Dept.
FRIDAY.—11 A.M., Dr. McDougal: Electrical Dept. 3 P.M., Dr. Pritchard: Medical Wards. 2 P.M., Mr. Vlasto: Throat, Nose, and Ear Dept.
SATURDAY.—10 A.M., Dr. Saunders: Medical Diseases of Children. 10 A.M., Mr. Banks-Davis: Operations on Throat, Nose, and Ear.
Daily, 10 A.M., to 6 P.M., Saturdays, 10 A.M. to 1 P.M., In-patients, Out-patients, Operations, Special Departments.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.
TUESDAY, June 16th.—4.30 P.M., Dr. F. Thomson: Demonstration of cases illustrating the Early Diagnosis of the Infectious Fevers (at the North-Eastern Hospital, St. Ann's-road, N.).
FRIDAY.—4.30 P.M., Mr. J. Howell Evans: Hydrocele, Hæmatocele, and Pyocele.
Daily.—Clinics in General and Special Departments, Demonstrations, Operations, &c.

ST. MARY'S HOSPITAL INSTITUTE OF PATHOLOGY AND RESEARCH.
MONDAY, June 15th.—Mr. R. Robison, D.Sc.: The Chemistry of the Calcification of Bone.

HOSPITAL FOR SICK CHILDREN, Gt. Ormond-st., W.C.
THURSDAY, June 18th.—4 P.M., Dr. F. J. Poynton: Some Clinical Cases and their Lessons.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL, Marylebone-road, N.W.
THURSDAY, June 18th.—5 P.M., Mr. T. B. Davies: Ante-Partum Hæmorrhage.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C. 1.

POST-GRADUATE COURSE: MAY–JUNE, 1925.

CLINICAL LECTURES AND DEMONSTRATIONS.

MONDAY, June 15th.—2 P.M., Out-patient Clinic: Dr. Hinds Howell. 3.30 P.M., Localising Signs of Cerebral Lesion: Dr. Riddoch.

TUESDAY, June 16th.—2 P.M., Out-patient Clinic: Dr. Walshe. 3.30 P.M., Compression Paraplegia: (1) Extramedullary: Dr. Grainger Stewart.

THURSDAY, June 18th.—2 P.M., Out-patient Clinic: Dr. Kinnier Wilson. 3.30 P.M., Cerebral Vascular Disease: Dr. Gordon Holmes.

FRIDAY, June 19th.—2 P.M., Out-patient Clinic: Dr. Gordon Holmes. 3.30 P.M., Surgery of Spinal Cord: Mr. Percy Sargent.

COURSE OF LECTURES AND DEMONSTRATIONS ON THE PATHOLOGY OF THE NERVOUS SYSTEM.

MONDAY, June 15th.—12 noon, The Neuron: Dr. J. G. Greenfield.

A COURSE OF CLINICAL DEMONSTRATIONS will be given by Mr. H. J. Macbride, chiefly on METHODS OF EXAMINATION OF THE NERVOUS SYSTEM, in the Wards at 10 A.M. on Tuesdays and Fridays. The fee for this Course is £2 2s.

Mr. Armour and Mr. Sargent operate at the Hospital on Tuesday and Friday mornings at 9 A.M., or at such other times as may be announced.

Any part of the Course may be taken separately. Special arrangements will be made for those unable to take the whole Course.

Fees should be paid to the Secretary of the Hospital at the office on entering for the Course.

J. G. GREENFIELD, Dean of Medical School.

THE LONDON SCHOOL OF DERMATOLOGY, St. John's Hospital, Leicester-square, W.C. 2.

TUESDAY, June 16th.—5 P.M., Dr. FOX: Seborrhœic Affections of the Skin.

THURSDAY.—5 P.M., Dr. Whitfield: Eczema.

THE JAMES MACKENZIE INSTITUTE FOR CLINICAL RESEARCH, St. Andrews.

MONDAY, June 15th.—10.45 A.M., Dr. ORR: Cardiac Irregularities. 12 noon, Dr. Hynd: Clinical Examination of Urine. 4.30 P.M. (at the Bute Medical Buildings), Prof. Waterston: Structure and Development of the Heart.

TUESDAY.—10.45 A.M., Dr. Maitland Ramsay: The Eye: Its Response to Effort. 12 noon, Dr. Orr: Demonstration of Polygraph. 4 P.M., Dr. Bryson: Capillaries.

WEDNESDAY.—10.45 A.M., Dr. Rowand: Suspected Tuberculosis in Children. 12 noon (at the Bute Medical Buildings), Dr. Hynd: MacLean's Method of Estimating Blood-sugar. 4 P.M. (at the Bute Medical Buildings). Prof. Herring: The Action of Insulin.

THURSDAY.—10.45 A.M., Dr. Paton: A School Outbreak of Diphtheria. 12 noon, Dr. Hynd: Chemical Composition of the Blood. 4 P.M. (at the Royal Infirmary, Dundee), Prof. Patrick: Clinical Demonstration.

FRIDAY.—10.45 A.M., Dr. Paton: Interpretation of Radiograms. 12 noon, Mr. Smith: Radiography of Duodenal Ulcer. 4 P.M., Case Reading.

Appointments.

BULMAN, M. W. B., M.B. Lond., F.R.C.S. Eng., has been appointed one of the Medical Referees under the Workmen's Compensation Act for the Districts of the Aylsham, Downham Market, East Dereham, Fakenham, &c., County Courts (Circuit No. 32), in place of Sir Hamilton Ballance (resigned).

ELLMAN, PHILIP, M.R.C.S. Eng., L.R.C.P. Lond., Assistant Medical Superintendent to the West Middlesex Hospital, Isleworth, Middlesex.

Manchester Royal Infirmary: BRYCE, A. G., M.D., F.R.C.S., D.P.H., Resident Surgical Officer; SUTHERLAND, D. M., F.R.C.S. Eng., Surgical Registrar; DUGUID, J. B., M.B. Aberd., Senior Pathological Registrar and Curator of the Royal Infirmary Museum; TWINING, E. W., M.R.C.S., L.R.C.P. Lond., Senior Assistant Medical Officer in the X Ray Department.

Westminster Hospital: DAVIES, J., M.R.C.S., L.R.C.P. Lond., DAVIES, M., M.R.C.S., L.R.C.P. Lond., DAVIES, W. H., M.R.C.S., L.R.C.P. Lond., House Physicians; DUNLOP, H. A., M.R.C.S., L.R.C.P. Lond., COLES, B. A., B.Sc. Wales, M.R.C.S., L.R.C.P. Lond., WILSON, J. G., M.B., B.S., M.R.C.S., L.R.C.P. Lond., D.P.H. Lond., House Surgeons; ISAACS, E. J., M.R.C.S., L.R.C.P. Lond., Resident Obstetric Assistant.

Certifying Surgeons under the Factory and Workshop Acts: CAMPBELL, T., L.M.S.S.A., Sandy District of Bedford; MACMILLAN, C., M.B., Ch.B.Glasg., Tunbridge Wells.

Vacancies.

For further information refer to the advertisement columns.

Birkenhead and Wirral Children's Hospital.—H.S. £100.

Bradford Children's Hospital.—H.S. £100.

Brighton, Royal Sussex County Hospital.—Hon. S.

Cancer Hospital, Fulham-road, S.W.—H.S. at rate of £100.

Chichester, Graylingwell Mental Hospital.—Jun. M.O. £450.

City of London Mental Hospital, near Dartford, Kent.—Jun. M.O. £350.

Dreadnought Hospital, Greenwich.—H.P. and H.S. Each at rate of £110.

Glamorgan County Council.—Dental S. £500.

Gordon Hospital, Vauxhall Bridge-road, S.W.—Res. H.S. at rate of £75.

Great Yarmouth Hospital.—H.S. at rate of £150.

Hampstead General and North-West London Hospital, Haverstock-hill, N.W.—H.P., H.S., Cas. M.O., and Cas. Surg. O. All at rate of £100.

Hospital for Sick Children, Great Ormond-street, W.C.—H.S. Also H.P. Each at rate of £50.

Hull Royal Infirmary.—Asst. H.S. at rate of £130.

Kirbymoorside, Yorkshire County Orthopædic Hospital.—H.S. £250.

Lancaster Rural District Council, &c.—M.O.H. £800.

London Jewish Hospital, Stepney Green, E.—Asst. S. to Ear, Nose, and Throat Dept. and Asst. S. to Gynæcological Dept.

London Lock Hospital, 91, Dean-street, W.—Clin. Assts.hips.

Manchester, Ancoats Hospital.—Res. S.O. £200. Also H.S. at rate of £100.

Manchester, St. Mary's Hospitals.—Two H.S.'s. Each at rate of £50.

Manchester University and Royal Infirmary.—Director of Lab. of Clin. Investigations. £600.

Margate, Royal Sea Bathing Hospital.—H.S. at rate of £200.

Newcastle-on-Tyne, Royal Victoria Infirmary.—Hon. Asst. S.

Northampton General Hospital.—Hon. S.

Preston and County of Lancaster Royal Infirmary.—Jun. H.S. £150.

Queen's Hospital for Children, Hackney-road, Bethnal Green, E.—Asst. S.

Royal London Ophthalmic Hospital.—Retraction Asst. £100 for two mornings a week.

St. Peter's Hospital for Stone, &c., Henrietta-street, Covent Garden, W.C.—Clin. Assts.

Sudan Government, Wellcome Tropical Research Laboratories, Khartoum.—Asst. Bacteriologist. £E.720.

Surrey County Council.—Asst. M.O.'s in Pub. Health Dept. £600.

University College Hospital, Gower-street, W.C.—Asst. Radiologist at rate of £300.

West Bromwich and District Hospital.—Res. Asst. H.S. £180.

West London Hospital, Hammersmith-road, W.—H.P., H.S., Aural H.S., and Res. Cas. O. Each at rate of £100.

Willesden General Hospital, Harlesden-road, N.W.—Vacancy on Hon. Med. Staff.

Wolverhampton and Midland Counties Eye Infirmary.—H.S. £200.

Births, Marriages, and Deaths.

BIRTHS.

BULMAN.—On June 7th, at Baggallay-street, Hereford, the wife of Dr. J. R. Bulman, of a son.

DUPONT.—On May 31st, at Bridge House, Frome, the wife of Dr. Dupont, of a daughter.

MARRIAGES.

CHRISTIE—LONGWILL.—On June 4th, at St. Columba's Church, Pont-street, London, Graham Wilson Christie, M.C., F.R.C.S.E., to Josephine Wright, daughter of Walter Longwill, Woodhey-road, Rock Ferry, Cheshire.

FULLER—INGRAM.—On June 1st, quietly, at St. James's Church, Muswell Hill, Andrew Radburne Fuller, M.R.C.S., L.R.C.P., D.P.H., to Elizabeth Mary, younger daughter of Dr. and Mrs. P. R. Ingram, of Muswell Hill, N.

ROCYN JONES—LLEWELYN.—On June 4th, at St. Paul's, Portman-square, W., Arthur Rocyn Jones, M.B., F.R.C.S., of 146, Harley-street, W., to Margaret, second daughter of the Rev. D. J. Llewelyn, formerly vicar of Beaufort, and Mrs. Llewelyn.

STEPHEN—THOROGOOD.—On June 4th, at St. Dunstan's Parish Church, Cheam, Surrey, Dr. William H. Stephen, M.B., C.M., of Westborough-road, Westcliff-on-Sea, to Ena Thorogood, daughter of the late A. R. Thorogood, of Pitsea.

WILTSHIRE—TIBBETS.—On June 3rd, at St. Matthew's, Westminster, Harold Wiltshire, D.S.O., M.D., F.R.C.P., to Ellen, daughter of the late Edward Tibbets, M.D., of Bradford.

DEATHS.

KEEN.—On June 3rd, after a short illness, Dr. Ernest Beresford Keen, T.D., Major, 13th London Regt. and R.A.M.C. (T.A.).

LEWIS.—On June 8th, at Hamilton-terrace, St. John's Wood, N.W., after a very brief illness, Edward John Lewis, M.B., F.R.C.S., aged 65 years.

SIRCOM.—On June 1st, at a nursing home in Bristol, Edmund Ralph Sircom, M.R.C.S., L.R.C.P., of Romford-road, Stratford, Essex.

SUTHERLAND.—On June 6th, at Pembridge-villas, W., Deputy-Surgeon-General Philip Warren Sutherland, I.M.S., in his 94th year.

WHITCOMBE.—On May 30th, at the Royal Berkshire Hospital, Reading, the result of a motor-cycle accident, Charles Henry Whitcombe, F.R.C.S.E., South Cerney, aged 69.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Comments, and Abstracts.

HEALTH EDUCATION IN CANADIAN SCHOOLS.

Sir William Hamer, medical officer of health and school medical officer for the County of London, took the chair at a meeting held in London on June 4th, when a large gathering of teachers, children's care workers, and school nurses listened to a lecture on this subject by Miss Jean E. Browne, president of the Canadian Nurses' Association and director of the Canadian Junior Red Cross. The speaker explained that health work in the Canadian schools began about 15 years ago, when a school medical service, based largely upon the English system, was set up. At first attention was directed to the correcting of physical defects and the limiting of the spread of communicable diseases. Later the general hygienic conditions of the school buildings received due consideration, while of recent years most important work has been done with regard to the health education of children and the formation in the children of health habits. Miss Browne described the school medical service as it exists in Toronto as an example of how the problem is tackled in the towns, and, pointing out that Canada is a great rural community, she described the school medical service in the province of Saskatchewan. The teaching of hygiene has undergone a great transformation in Canada within recent years. The more formal instruction has been supplemented by interesting games in which the children design health posters or act in health plays, while the older girls receive instruction in infant care in "little mothers" classes. Hygiene is now a compulsory subject in Canadian schools, from kindergarten to the end of the third year in the secondary schools. In the most junior classes there is no text-book nor formal teaching, but every effort is made to get certain habits firmly fixed in the minds of the youngest children. Later, when the children begin to ask why they need wash, or why they need fresh air and so forth, instruction in physiology is introduced and so on until the oldest children are led to study public health in many of its aspects, including such subjects as ventilation, clean milk, and housing. The training schools for teachers also give instruction in hygiene, so that the coming generation of school teachers will be well fitted to carry on the teaching of this subject in an interesting manner. To get the child's imagination and will to work requires something more than all this instruction, however, and this something more appears to have been found in the Junior Red Cross which is an organisation of the children themselves with world-wide ramifications. There is strong demand both by the school teachers and the public health authorities alike in Canada for the Junior Red Cross which appears to encourage in the children the desire for health and which, by its simple rules, is helping to build up a generation in which healthy habits will have been fixed since youngest childhood.

A NOVEL CERTIFICATE.

IN the current issue of the *Military Surgeon* (May, 1925, p. 638) it is stated that, at the request of the Surgeon-General of the United States Army, a careful survey of the army general hospitals in the United States was carried out by the Director of Hospital Activities of the American College of Surgeons. All the five hospitals are reported as "fully approved," being far above minimum standards, and reaching maximum in most respects. They are recognised as having, in the words of the report, "proper organisation for general management, adequate facilities for diagnosis and treatment, efficient personnel, systematic procedure and technique, and a careful check-up and audit of the clinical work at all times." Such a report must be a comfort to mothers sending their sons into the American army.

RAT DESTRUCTION.

THE enormous loss caused by rat infestation ought to arouse a more general effort to reduce their ravages. Mr. Mark Hovell, in a recently published book,[1] puts the loss in Great Britain alone at £1,000,000 per week and claims that this is certainly not an exaggerated estimate. He lays it down that each person should be held responsible for the rats on his premises and that if he does not have them killed, they must be destroyed at his expense. The advantages and disadvantages of all the different methods of rat extermination are discussed in detail. The opening chapter contains much of interest with regard to the habits of rats. Their extraordinary fecundity is, of course, one of the difficulties. The author shows that even with litters of moderate numbers a pair of rats may have very many descendants at the end of a year. Thus a pair of rats estimated to produce ten young ones in each litter and only six litters in the course of the year, at the end of the year will have 1130 descendants. Mr. James Rodwell, in his book, "The Rat," published many years ago, allowed only four litters in the year and eight young in each litter, and showed that even on these reduced figures a pair of rats could produce in three years 253,762 descendants. In an introduction to Mr. Hovell's book, Mr. S. L. Bensusan, who has been waging war on rats for 25 years, states that it is the most complete and reliable work on rat destruction yet to hand in any language. Certainly it should be studied by all whose duty it is to take part in the campaign against rats. The volume includes a scheme for the organised destruction of rats throughout Great Britain which merits the serious consideration of the Board of Agriculture.

[1] Rats and How to Destroy Them. By Mark Hovell, F.R.C.S. London: John Bale, Sons and Danielsson, Ltd. 1924. Pp. 453. 10s. 6d.

CHESS AS A THERAPEUTIC AGENT.

IT is a pleasure to read a book on chess which is so clear and well printed as the little volume entitled "The Elements of Chess," by Mr. J. Du Mont (London, G. Bell and Sons, Ltd., 1925, 7s. 6d.). Owing to the plentiful use of diagrams the reader is led without undue exertion from an elementary description of the game to a discussion on more advanced problems. If chess were boomed in the press in the same way as crossword puzzles it would surely gain and maintain a popularity unequalled even in an age of bridge and Mah-Jongg. For those many ills which are attributable to boredom a course of chess might suitably be prescribed, and this book could with advantage be recommended as part of the prescription.

POPULAR HANDBOOKS FOR WOMEN.

IGNORANCE is said to be mainly responsible for high infantile mortality-rates, so that the increasing number of popular or semi-popular books on mothercraft which have been appearing within recent times should have done something towards lowering the rate in this country. Authorities agree that the lower rate in certain parts of the country and the lowering of the rate for the nation as a whole are undoubtedly due to the spread of knowledge. Popular books on this subject, provided that they are free from excessive evidence of fads or crankiness, are therefore welcome and, even if they do no other good, a continuous insistence on the paramount importance of antenatal supervision and breast-feeding will eventually bear good fruit. Dr. Webb-Johnson's book [1] goes farther than this; he discusses brightly woman and her food, her sleep, her beauty, her dress, her home, and even her religion. Controversial subjects such as birth-control and twilight sleep are treated impartially, and sound advice is tendered with regard to marriage and the sex question.

Dr. Harry Roberts[2] does not travel so far afield and his book consists mostly of advice on marriage, pregnancy, and the management of children in health and disease. The language is simple, the advice reasoned, and here again certain controversial matters are dealt with.

[1] Woman's Health and Happiness. By Cecil Webb-Johnson, M.B., Ch.B. London: Methuen and Co., Ltd. 1925. Pp. 242. 6s.
[2] The Young Wife's Advice Book. By Dr. Harry Roberts. London: Ward, Lock, and Co., Ltd. 1924. Pp. 192. 2s. 6d.

GLASGOW VICTORIA INFIRMARY.—This hospital of 260 beds is to be enlarged by a wing containing 120 beds, two operating theatres, and an addition to the nurses' home.

DONATIONS AND BEQUESTS.—Miss Alice Woodhall, of Perry Bar, Birmingham, left by will £500 each to the Birmingham General Hospital; the Queen's Hospital, Birmingham; the Institution for the Blind, Edgbaston, the Home for Crippled Children, and the Hospital for Women, Birmingham.—Sir George Donaldson, Hove, left £1000 each to the London Hospital, the Sussex County Hospital, and the Royal Normal College of Music for the Blind.—The Liverpool Royal Infirmary has received £623, the Stanley Hospital £231, and the Liverpool Dispensary £40 from the proceeds of the Liverpool University students' "Rag" per the Liverpool Hospital Saturday Fund.—Mr. Robert Tatham, Lancaster, left £1000 to endow a bed at the Royal Lancaster Infirmary.—Mrs. Sarah Frances Underwood Fisher, Hove, who left £9587, directed that after payment of certain legacies one-half of the residue of her property be given to the Victoria Hospital, Swindon.—St. Mary's Hospital, Manchester, has received £1500 towards a legacy by the late Mr. James Parr.—Mr. Spencer Vere Hare, Bristol, left £500 to the Bristol General Hospital and £200 each to the Bristol Royal Infirmary, the Bristol Eye Hospital, and the Bristol Home for Crippled Children.